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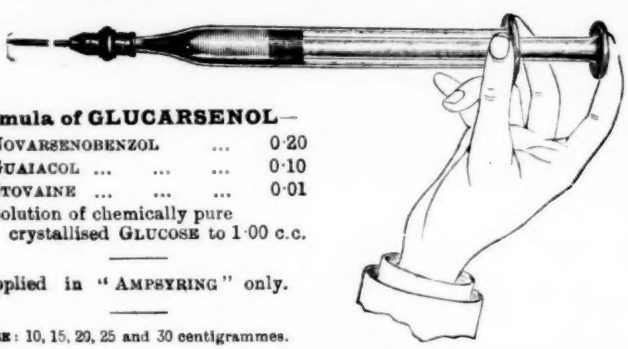

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WHEN your predecessor, Sir, in the chair invited me to deliver this oration—part of the Hunterian Festival—I felt misgivings as to my capacity to deal adequately with a subject which had occupied the attention of so many distinguished men. It seemed impossible to say anything new about Hunter, and, moreover, I had in 1892 dealt with his work in the annual oration before the Hunterian Society. It appeared to me, however, that this was an occasion when one might endeavour to trace the influence on others of one who by his sole effort had transformed professional outlook and teaching; to see how far his immediate pupils had carried forward his exploration into the untrodden fields of physiology and pathology. Let me first pay a tribute to the memory of the great biologist and surgeon whose birth we commemorate to-day.

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It is now my object to trace in the career of one distinguished pupil—Astley Cooper—the influence of Hunter's teaching, and to show how the principles laid down were expanded and applied. It is becoming that I should choose a Guy's surgeon, for through Cheselden of St. Thomas's and Sharp of Guy's the Hunters derived their early instruction in surgery, and, moreover, we find in him perhaps the best exponent of the application of Hunter's teaching and one who did more than any other surgeon of the time to stimulate inquiry.

ASTLEY COOPER.

Time will not permit more than the briefest account of the long and busy life of this great teacher, who from the age of 17 till the year of his death at 74 never relaxed his investigations in anatomy, physiology, and surgery. He was endowed by nature with many fine qualities—courage, originality, a critical mind, power of concentration, a wise scepticism, and a lively imagination. He inherited splendid health, the value of which he fully recognised, and was blessed with a sense of humour, and a frank, open-hearted, generous nature. From his father, a clergyman, for those days of liberal thought and wide outside interests, he learnt the classics. His mother taught him history and grammar, and instilled into his mind religious principles, truthfulness, and a taste for literature; for she was an authoress of no mean repute. He was a high-sprited, attractive lad, fond of practical jokes, and showed none of the studious habits of his brothers who were sent to the university. The decision to apprentice him to surgery was made at the suggestion of his uncle and not from any predilection on the part of the nephew. The boy thus had a free youth, not over-taught nor overstrained, and had enjoyed the usual country sports. He had just completed his sixteenth year when he arrived in London in the month of August, 1784, to become apprentice to his uncle, Mr. Cooper, at that time surgeon to Guy's Hospital. He was a tall handsome youth, overflowing with high spirits, and soon became a favourite in the household of Mr. Cline, where he lived. It was usual for the apprentice to dwell with his master, but it was thought better for uncle and nephew not to be thus associated. Shortly afterwards, at his own request, he was transferred as apprentice to Mr. Cline, a circumstance having a far-reaching effect on his future, when the characters of the two surgeons are contrasted. His uncle was a fair anatomist, but as a surgeon followed traditional lines, and was too set to appreciate Hunter's teaching. He acknowledged that he could never understand him, and usually fell asleep at his lectures.

Cline, on the other hand, now about 38, was surgeon at St. Thomas's. He was a follower of Hunter, carried out his principles in his teaching, followed his experimental methods, was a good practical surgeon, and a man of sound judgment. He published hardly anything, and we know most about him from the frequent references of Astley Cooper. The democratic views held by Cline were inhibited by his apprentices. Such an influence was conducive in encouraging an opposition to tradition, and had its value, no doubt, in forming the mental outlook of Astley Cooper. Cline,

no doubt, gauged the tendencies and character of the lad, who had exhibited no special leaning towards surgery, and set him a task in dissection which put him on his mettle. The performance was successful and the young student seems at once to have grasped the importance and interest of the subject, and from that time became an ardent anatomist. No doubt Cline, as he watched the progress of the dissection, which was made in his own house, pointed out the meaning of the structures exposed and directed the young observer to further inquiries.

He now threw all his energy into the study of anatomy and surgery, having the entry into both St. Thomas's and Guy's, which at that time were on opposite sides of the same street, the two hospitals being known as the Borough Schools. In scraps of autobiography he mentions his constant attendance at these hospitals and his habit of making notes of all important cases, and of taking every opportunity of attending post-mortems—then quite exceptional—and of examining the parts removed by operation. At Cline's suggestion, no doubt, he began attendance at Hunter's lectures, and had the priceless advantage of talking over the subject with his master and with other apprentices, one of whom interested him in botany and another in physiology.

In his indentures it was provided that he might spend a session in Edinburgh, and thither he went in October, 1787, in his twentieth year. He carried introductions to the leading professors, of whom, having heard much, he was anxious to see and hear. And he was not disappointed. Cooper was by this time a good anatomist, and, moreover, had spent much time at the bedside and had made careful notes of the cases, so that he was in a position to discuss both anatomical and surgical questions. From his frank and courteous manner, free from assertion, he was well received, and was made a member of the famous Royal Medical Society and offered the presidency should he return. He made good use of these seven months—spending his time in the infirmary, making notes of the cases, and attending lectures by Monro and others. "Being near them," he writes, "did not diminish the importance I had been led to attach to them from their public character." At Edinburgh he learned order and system, for which the teaching has always been famous, and under this guidance he planned a method of examining cases of disease which led to the surest and safest mode of forming a diagnosis, and this he pursued throughout his life to the advantage of his teaching and his practice.

Now comes his first appointment as a teacher of anatomy. He had proved himself an industrious and zealous student, and for some time had assisted his fellow students in their dissections. In 1789 he was appointed demonstrator of anatomy at St. Thomas's Hospital, and so well had he filled this important position that two years later he was asked by Mr. Cline to take a share in the lectures on anatomy and surgery. He was now 23 and not quite out of his seven years' apprenticeship; he had put into these seven years an immense amount of work and was well qualified to undertake the duties. With Hunter he must have been on as familiar terms as any of his class, and had assisted him in the dissection of a whale. He had spent seven months at Edinburgh in close association with the eminent men at that renowned school. He had acquired at the Physical Society the art of speaking and discussion. When one adds to this record his personal charm, his fine presence, his interest in others, and his enthusiasm and love for his profession, one can hardly wonder at Cline's choice of an assistant.

Hitherto the subjects of anatomy and surgery were combined in the same lectures, a plan which Astley Cooper considered was injurious to both. After some hesitation Cline agreed to their separation, and in future the anatomical lecture was given daily from 2–3.30, and that on surgery in the evening at 8 o'clock. He now resolved to devote the next three years solely to improving his knowledge of anatomy and surgery, without endeavouring to amplify his income derived from the lectureship, by seeking private practice. This momentous resolve he was enabled to carry out, owing to his wife—whom he married this year—possessing a considerable fortune. Then followed a very happy domestic life, clouded, alas, in the early years, by the death of their only child while still an infant.

In his first course of lectures on surgery he followed the Hunterian model, but was disappointed to find that his class was inattentive, and suffered still greater disappointment when the number entering for the following year had decreased. Reflecting on the cause of this want of success, he realised that the men had been apprenticed for five years under surgeons taught on the old lines, and could not understand such terms as "action," "adhesion," "resolution" as applied to living processes. At these terms Hunter's own contemporaries had scoffed. He arrived at the quite sound conclusion that it was necessary for his pupils to have a considerable knowledge of surgery before they could comprehend the application of the principles enunciated by Hunter. He at once changed his method, and with immediate success. Cases of disease and injury were brought before the class, the cause and nature of the disease or accident described, with the appropriate treatment, and afterwards the physiological and pathological bearings applied and further illustrated by morbid specimens and experimental results. This method he pursued throughout his 40 years, enriching his lectures with cases from his own experience, and as this widened the lectures became more and more valuable. But never did he lose sight of the scientific side or relapse into the method of earlier lecturers, who dealt with cases only. Always inquiring by dissection, by study of disease in the living and the dead, and by experiment he was constantly improving his teaching. The lessons to be learnt from such vast inquiry were brought to the service of his class, and each year further light was thrown upon old subjects, and not from second-hand knowledge, but from the actual observation of the teacher himself.

So successful had his lectures become in his second course that when he began the third in 1793 the number of entries had doubled. In this year, at the age of 25, he was appointed lecturer at Surgeons' Hall. This was an annual appointment made by the Company of Surgeons. It was renewed for the next two years, when he resigned. The lectures were given on the bodies of executed "persons," to use his own terms, the theatre was constantly crowded and the applause excessive. With pardonable pride he writes: "I became a very popular lecturer." To further improve the education he very soon after his appointment promoted a society, confined to the pupils of the two hospitals, where cases of interest were shown and discussed. This existed for several years and was of particular value to the younger men, for the discussions at the Physical Society were beyond the range of any but the senior members of the schools. In a word, he devoted the first three years to the welfare of the students, and when one adds his personality, the buoyant spirits, the sense of humour, the hearty laughter, his readiness to help in their work, and his kindly advice and often assistance in more substantial ways, is it any wonder that he was sought after as a teacher and beloved as a friend. For nine years he continued these demonstrations and lectures, pursuing without intermission his studies in anatomy, comparative anatomy, and physiology. He had gradually obtained private practice, and by the end of the period his income from this source was said to amount to £1000.

In 1800 he was appointed surgeon to Guy's Hospital, thus securing the acme of his ambition at the age of 32. Objections were raised on account of his democratic associations, but the treasurer, Mr. Harrison, being satisfied that Astley Cooper had abandoned these political connexions, and convinced that he was the better candidate, allowed him to canvass the governors, with the result that he received their unanimous support. He was well equipped for the position, for though he could not have performed many operations, he had acquired from his dissections such a knowledge of anatomy as would enable him to work with accuracy and speed, and from his experiments on animals a

refinement of technique not possessed by any of the other competitors.

[Sir Charters Symonds pointed out how the progress of surgery had depended largely upon the use of living animals, dwelling especially upon the present position of cerebral surgery, saying that further progress requires the same means of investigation, surrounded, of course, by due safeguards and in the hands only of competent persons.]

As a Teacher.

Astley Cooper was undoubtedly a great teacher and in this regard probably had a wider influence than anyone of his time. He no doubt possessed a natural gift for teaching, but this would not have gained him the position he obtained in this respect had it not been for his industry and his determination to enunciate no doctrine unless proved by observation and experiment. He was not a genius in any sense, and he himself attributed his success entirely to his industry. He had clear ideas how knowledge should be acquired, and constantly impressed upon his class the importance of personal observation. He recognised the evil effect of too much teaching and inculcated personal observation of the processes of nature.

"If," he writes, "the method of observation be not pursued and too much attention be given to theory, they have (i.e., the students) afterwards, when they embark on their professional practice, not only everything to learn, but also to abandon those false impressions which hypothesis is sure to create. It is right, therefore, that those who are studying their profession should be aware that there is no short cut to knowledge."

He further lays it down that—

"In collecting evidence upon any medical subject, there are but three sources from which we can hope to obtain it—from observation on the living subject, from examination of the dead, and from experiments on living animals. By the first we learn the history of disease, by the second its real nature so far as it can be certainly known, and by experiments on living animals as ascertain the processes resorted to by nature for restoring parts which have sustained injuries, and then apply that knowledge to accidents in man." "These," he adds, "are the only sources of true knowledge, and the deductions from these are the sole basis of legitimate theory."

MODERN MEDICAL EDUCATION.

This advice is as sound to-day as when it was uttered. Let us see how far we are conducting education by the method of observation. Our problems with regard to teaching to-day are even greater than in his time, and chiefly because of the immense increase in knowledge. Anatomy remains much the same—it is a finite subject; while physiology, and especially medicine—in its largest sense—have expanded enormously. Even anatomy as taught at present has become too heavy a burden for the average student. Has it not become too minute? Consider the enormous number of names to be memorised. Is it really necessary for anyone but a pure anatomist to know the exact attachment of all the muscles—for example, of those of the spine, the minute markings in the bones, to which side a bone of the carpus belongs, the whole account of, say, the lachrymal bone and to which side it belongs? Take the brain and central nervous system. Might not more than half be omitted? In all directions I would urge curtailment of the requirements in this subject for the pass examinations and a fuller study of the essential parts. Examiners may reply that they do not expect the candidate to know the whole of anatomy. But the candidate does not know this, and if he wishes to make sure of passing is obliged to cover the contents of a text-book. What is the result? He is not familiar with any part, and while he should be giving time to the larger and more important questions—to the coördination of muscles, to the bearing of anatomy on surgery—he is compelled to "get up," say, the otic ganglion and to be able to recognise any cross-section of the brain. Examiners complain that a candidate often fails to recognise an ordinary muscle, and I have seen one fail over the supinator longus. But is this his fault? I claim it is not, for he has little chance of making himself familiar with the structures in various attitudes because of the lack of opportunity. How can familiarity with anatomy be acquired when three men are engaged on one part? It is impossible to learn anatomy from pickles and wax models. But apart altogether from this deficiency in material I would urge a large reduction in the amount to be acquired. It would surely be possible to cut out a good third of anatomy without the omission of anything essential, or diminishing the instructive value of the subject. I appreciate the dislike of any anatomist to rest satisfied with less than the whole, but I fear he must be called upon to modify his desire.

Dearth of Subjects.

Observation in anatomy is being hampered by the lack of material. There were difficulties in obtaining material for dissection in Astley Cooper's time, and though since the Anatomy Act the supply has been regularised, the schools are again so short of material that the teaching is seriously imperilled. At the opening of the session last year, when the entries were particularly large, the supply was almost nil; urgent representations have been made to the Health Minister who now controls this question. In his reply he states that there is a sufficient supply of unclaimed bodies, and that pressure would be brought upon the guardians. It cannot be too strongly represented to the public at large that anatomical and surgical teaching is at present seriously interfered with. Operative surgery cannot be taught, and the practical examination in this subject for the final Fellowship has in consequence for the present been abandoned. Those in opposition to this essential requisite for instruction cannot be ignorant that it is impossible without dissection to educate medical practitioners, and more especially surgeons. They are acting against their own interests and the welfare of the community. Fresh legislation may be necessary, and this has been promised should the present effort be fruitless. I would here appeal to all who have any influence to press this matter upon the attention of those in authority.

Again, physiology has become such an enormous subject that it is impossible for any student adequately to cover the ground in the time at his disposal. The physiologists, many of whom are specialists in one branch—for you can only dig deeply in a narrow field—are the examiners. One can quite understand an examiner, an authority on, say, respiration, being dissatisfied with the answer of a student who has gained his knowledge from a text-book and sat under a lecturer whose chief interest is in the nervous system, and obtained most of his practical instruction from demonstrators. The time has come, indeed has long come, when some definite agreement should be arrived at between the teachers and the examining board as to what limit should be set for the pass examination in both subjects. Are not the rejections in these two subjects excessive? And yet the men, as a rule, are attentive, do their best, read the text-books, and yet fail. Why is this? Not, I believe, because the students are idle or lacking in ordinary ability, but because of the magnitude of the subjects. And yet when these men enter the wards the majority find no further difficulty and turn out capable practitioners. We can all as teachers in the medical schools recall really good men who have been rejected, in both these subjects and at the finals. In dealing with these matters we must always keep before us the capacity of the man with average abilities and the requirements for a pass examination. Far be it from me to advocate anything which would diminish the highest scientific culture to which we can attain; for this would be contrary to the teaching of Hunter and his pupils, who did so much to elevate the position of the medical profession.

But we have also to consider our responsibility to humanity and the call upon us to give our men such instruction in the limited time at our disposal as will not fail them at the bedside.

Evil Effect of the Prolonged Course in the Preliminary Sciences.

The effect, it seems to me, of the long course in the preliminary subjects on the mind of the average man

is to check his powers of observation and fatigue his brain. He has to learn from a book the greater part of his work, to conduct chemical experiments according to plan, to dissect a worm guided by a diagram. In anatomy he must get up a host of things to be soon forgotten. What is the result? He comes to the wards after an all too brief holiday, often with the edge of his keenness dulled, with some of his best energy wasted, and without having had any opportunity of exercising independent inquiry or observation. The man with able brain and good physical power does not suffer materially, for he has found relaxation in outside reading, intellectual associations, and in exercise. In the majority both mind and body have suffered, the former from too narrow a course of study, which has cramped the powers and allowed no freedom of thought, the latter from too little recreation. The student inclined to take a by-path in physiology must forgo what would be a valuable exercise in order to keep to the syllabus, for the examination is always before him. In effect the student being a man is still under tutelage as a boy and, I submit, suffers injury. The only remedy is, I believe, first to reduce the curriculum to reasonable dimensions and then to bring the student early in contact with the sick and injured. Here he will learn to observe and have the opportunity of applying his knowledge as it is acquired. Consider, moreover, the immense value to younger men of having such a common ground for discussion, and of getting away from books and the routine of the class-room.

While by no means wishing to be understood as decrying the study of the collateral sciences—these handmaids of medicine—an acquaintance with which is indispensable, the question I would raise is this—Do they hold, as taught to-day, their due proportion to the later subjects? However well informed a man may be in the preliminary sciences, the final court of appeal is at the bedside. Here alone can he acquire familiarity with disease. The mental attitude of the patient must be studied, he must be considered as a man, as a sensitive being. The special reactions of each individual to his surroundings and to the disease from which he suffers must be noted. The student must learn to set a value on signs which are not to be estimated by any physical apparatus; in children to interpret the meaning of a cry, a restlessness, a refusal of food. Familiarity at the bedside can alone provide such knowledge. The student of medicine throughout his life must be sensible of the atmosphere which surrounds the sick-bed.

Is a due proportion of his time in hospital allotted to this most essential part of the curriculum? If not, then surely our method is at fault, and we are like to turn out men armed with all kinds of scientific method, but lacking that most necessary possession the power of interpreting the condition of the patient. When the time allotted to professional studies is considered, and when the range of these studies is taken into account, does there appear to be no danger, that, in some instances at least, that which is subordinate may in a great measure supersede that which is essential.

We constantly hear it said by examiners in the final subjects, who are at the same time teachers, that the candidate shows a lack of familiarity with bedside knowledge. He "has too much teaching," is "spoon-fed," his answers are drawn from the book and not from observation. If there be anything in this criticism, is it applicable to such a proportion of students as to compel attention to the mode of education? What proportion of the men preparing for any profession, given opportunity and a few directions, may be left to themselves, to extract the honey from the flowers? Is it more than 5 per cent.? Whatever it be, the majority require more direction, and if the result of our teaching in surgery is that 45 per cent. are rejected it does seem that, given average ability in the students, a defect exists, and must lie in the education, in the examination, or in some want of coördination between the two.

What characterises the man of ability is the power to observe, to coördinate, to contrast, and to draw deductions. The average man possesses his share of these powers, but they have not been exercised, and our problem, especially in the clinical period, is to develop the power of observation. The only opportunity the student of medicine has for independent observation, it seems to me, is in the clinical field, and the sooner he is brought there the better.

Now let us look for a moment at the curriculum as a whole. The man who qualifies in five years must not fail at any examination. Of this period he has no more than 20 months for the study of the final subjects, and to accomplish the result he must hold appointments continuously. Only a very able man can get through in the time, and very few make the attempt. The majority take over six years, a good many seven years, to pass the Conjoint Board. Is there any wonder when one considers what he has to learn? What is to be done? It is clear to everyone that the curriculum is overloaded, and there are only two remedies: Reduce the subjects in the earlier studies or lengthen the curriculum. The latter no one desires, but there is, as far as I can gather, a general opinion that a drastic reform is needed in the time allotted to the earlier subjects, and more especially in their extent. I admit that, ideally, it looks well for the student to advance from the lower organic world to the higher, but I very much question whether it is not better for him to begin with human anatomy, leaving the study of the lower animals and vegetable world to be worked in with human physiology. Physiology is more important in the study of medicine than anatomy, and if curtailed in the earlier years is there any reason why it should not form part of the later period? I believe the student would gain immensely by such a change, for he would constantly be applying his knowledge—which would in this way be kept fresh—in the explanation of morbid processes. Moreover, he would be informed of the newer discoveries, for the knowledge of physiology is constantly advancing; it is not finite as is anatomy. We require, indeed, a new conception in the teaching of this important subject, and almost a new kind of teacher—one who has a practical knowledge of disease. There was a time when a physician lectured on physiology, and provided he did not carry on too long the plan was sound. The student was shown the application of the science. Is it not possible to get back to some such combination with physiology predominant? So one day we may see the physiologist at the bedside. Simplify anatomy in the early period, and in the later period let applied anatomy be taught by the professor in this subject.

Contrast for one moment the teaching in Astley Cooper's time—then the student came in contact with the sick and injured at once, and he learnt to apply his anatomical and physiological knowledge, and, above all, his powers of observation were being exercised. Have we improved in this? Personally, I am convinced that the sooner the student is brought into contact with the sick the better. It is satisfactory to see that in Birmingham the first-year men are shown examples of disease and injury, and that each year the time allotted in this way is increased. I hear that in the physiological lectures at one school in London patients are introduced to illustrate the effects of disease, a member of the general staff being associated with the lecturer on physiology. Under the unit system at one hospital the first-year men, I am informed, help in the out-patient work. It is a return to the days of Astley Cooper—from which we may extract something that may be useful to-day. My opinion is that we should reduce the time spent on the preliminary sciences, introduce clinical opportunities from the very first, and secure three years out of the five for the final courses.

ASTLEY COOPER AS SURGEON.

From the investigator and teacher let us pass to the consideration of the surgeon. As a surgeon Astley Cooper's name will always be associated with the ligature of arteries, for he it was who first put a ligature on the carotid; he was one of the earliest to tie the external iliac, and the only surgeon of his time to ligature the aorta. From his earliest days as an apprentice, and all through his life, he carried on

experiments of all kinds, and to him was largely due the demonstration of anastomotic circulation. Hunter had ligatured the femoral for the cure of popliteal aneurysm in 1785, when Astley Cooper was in the first year of his apprenticeship to Cline. No doubt master and pupil talked over this revolution in surgery which has saved so many lives, and saw the application of the principle to other situations. During the years that followed he tied all the main vessels in dogs and other animals to prove the truth of the anastomotic circulation. Both carotids were held to be essential to the integrity of the brain in man and animals. The fallacy was soon dismissed as far as dogs were concerned, for he tied both vessels simply and simultaneously, without ill-effects, and later combined ligature of both carotids with double ligature of the vertebrals. This was generally fatal, but one dog at any rate survived. The performance of such a feat in half an hour was a tribute to the operator's accurate anatomy and technical skill. It was his custom also to ligature the carotid at his lectures to demonstrate the safety as regards the brain. It was, however, generally considered that such an operation in man was "impracticable or would be injurious to the functions of the sensorium." Cooper, however, had found a case where one carotid had been obstructed by disease, and Dr. Baillie had communicated an example of complete obstruction of one and partial of the other carotid without ill-effects. The defence of the operation put forward by Travers after his own operation shows the controversy that existed, and emphasises the boldness of Cooper's undertaking.

The opportunity long anticipated at last arrived, and it was on Nov. 1st, 1805, that he ligatured the common carotid in a woman. It was an advanced case of aneurysm, and occupied so large a space, that it was just a question whether there was room for a ligature between the sac and the clavicle. In the skilled hands of Astley Cooper, however, that was accomplished which few would have attempted. The patient died from suppuration of the sac 20 days later. Astley Cooper was not discouraged, for he had established two points: that the carotid could be safely tied and without injury to the brain. In reading the account before the Medico-Chirurgical Society on Jan. 29th, 1806, he says: "The failure was due to the operation being too long delayed, and ..... it will not prevent my performing it in any case in which the disease is somewhat less advanced." It is not difficult to imagine the criticisms that would be levelled by those who thought such an operation unjustifiable.

The second opportunity came on June 22nd, 1808, and was a complete success. In reading this case before the same society reference is made to experimental ligature "many years ago." On the death of this patient 13 years later from apoplexy the brain was obtained, and a drawing is given in Guy's Hospital Reports, Vol. I. Both these operations were carried out in the presence of several surgeons of the hospitals and some visitors, and one cannot but admire the courage of the operator's convictions. In both instances examination showed that no injury had been sustained by neighbouring structures. On the same day on which the second operation took place he ligatured the external iliac in an urgent case in which rupture was imminent. Eighteen years later the specimen was obtained at considerable expense and trouble, for the man lived in the country. I am able to exhibit to you the preparation, which displays in an admirable manner the anastomotic circulation.

Finally came the culmination of this work in the ligature of the aorta. The operation was performed on June 25th, 1817, by the transperitoneal route. In referring to his experiments, when reading the paper on ligature of the carotid, he says: "Lastly, I was anxious to ascertain when even the aorta was tied if the blood would still find its course by anastomosis." This he had demonstrated in dogs, and had repeated the experiments two years before—i.e., in 1815. "The animal," he says, "survived the experiment and maintained his usual health." In Medico-Chirurgical Transactions, vol. ii., will be found a coloured illustration of the injected specimen. Here is a specimen of Astley Cooper's showing successful ligature in a dog. Again, it was unfortunate that the case was an advanced one and the man greatly reduced by hæmorrhage. The story of this operation is dramatic, but time will not permit more than a brief summary. The aneurysm was of immense size and filled the left iliac fossa; operation by the route adopted on animals was impossible, and he determined, rather than that the man should be left, to open the abdomen, displace the intestines, and secure the artery above the bifurcation. With his usual solicitude he explained the position to the patient, who replied, "Sir, I leave myself in your hands." With that dexterity which was the outcome of his experimental inquiries, he then placed the ligature without, as it proved, any injury to other structures. Though the man lived only 40 hours, the right limb had recovered its warmth and sensation, but the left—the affected side—remained cold and discoloured. This he considered due to the pressure of the large aneurysm interfering with the anastomosing vessels. Astley Cooper in his comments, after referring to the fear of many that such an operation would be immediately fatal, writes:—

> "We had to lament not that the operation was performed, but that it had not been sooner done. Sorry indeed should I be," he adds, "to sport with the life of a fellow creature, who might repose a confidence either in my surgical knowledge or my sympathy."

Thus we see that he had broken new ground, had thought out the details of possible operations, had by experiment on animals proved that so far as they were concerned success was obtained, and therefore might be anticipated in man. "The secret of success in life is for a man to be ready when his opportunity comes."

[The orator here considered Sir Astley Cooper's contributions to knowledge in wider fields; his publications on hernia, on fractures and dislocations, and on the anatomy of the breast. Travel, museum study, and discussion, of which Cooper recognised the educative value, brought him into personal touch with such men as Desault and Chopart. The orator set out the value of collective observation as it was made clear in Cooper's experience.]

PERSONALITY.

He was accused by some of his contemporaries of ignoring the work of others, especially his predecessors. This he frankly acknowledges, for so much of the teaching being vague and traditional, he felt that progress could only be made by individual research. He, however, frequently acknowledges his debt to Hunter, to whom he owed most, and next to his master, Cline, upon whose sound judgment he sets great reliance. He calls him "my most able and judicious præceptor," and in the dedication of the first volume on hernia acknowledges "that many of the ideas which it contains have been derived from your public and private instruction." The active part he took in the discussion at societies shows his respect for the opinion of his contemporaries. Of the younger men he showed no jealousy: "If I am more proud of one thing than another it is of inspiring zeal in the rising generation: it is in seeing the Lawrences, the Traverses, the Stanleys, the Brooks, the Earls of the day, rising into eminence."

Both Hunter and Astley Cooper fully gave of their knowledge to others, and were not concerned who discovered the truth so long as it was found. Truth to them was bigger than person or school. He held with Kipling that, "The game is more than the man in the game and the ship is more than the crew."

I have incidentally mentioned many points revealing his personality. A glance at the portrait shows that he was a man who must have had a commanding influence on others, both morally and intellectually. Offending at times from the rapidity of his decision in diagnoses, he nevertheless compelled attention from his superior knowledge. Writing of himself in the third person he says his "strength consisted in the quickness with

which he could decide upon the nature of a case, as well as the readiness with which he adopted his means of treatment. He was a good anatomist, but never a good operator where delicacy was required; for the operation of cataract he was never fitted by nature; for stone, aneurysm, hernia, and the removal of tumours prior to his giddiness he was excellent." These comments are somewhat disparaging when one recalls what he accomplished in the way of operations.

"His affection and consideration," says one of his dressers, a long and close friend, "brought comfort and confidence. In his behaviour towards his patients he set a fine example, explaining to the poorest in a kindly manner the nature of a proposed operation." When, however, he had made up his mind as to an operation there was no hesitation, and from his accurate anatomy and his skilful technique, he was rapid yet without hurry, accurate without delay, bold without rashness—essentials when we remember that there were no anæsthetics. He was generous in dealing with those to whom a fee meant a good deal. From the officers of Wellington's army he declined remuneration, explaining that as they had fought and endured hardships while he had benefited by the protection thus afforded, the least he could do was by showing his gratitude in the only way in his power.

Time will not permit even a list of the many honours conferred upon him at home and abroad. He was serjeant-surgeon to two sovereigns, upon one of whom he performed an operation, receiving a baronetcy in 1821. Two tributes, however, deserve special mention—the portrait which is before you, subscribed for by his old pupils, and the statue in St. Paul's erected at the expense of the senior members of the profession. The portrait by Sir T. Lawrence exhibits Astley Cooper somewhere approaching 60, and is considered the chef d'œuvre of this great painter. It is interesting to compare it with that of Hunter; both are looking up and into the future, both see much to be done—Hunter the philosophic genius and Cooper his great pupil, ready for any emergency.

He died in 1841 at the age of 74, having extended and upheld the reputation of British surgery for half a century, and was buried beneath the chapel of the hospital he loved so well and whose fame he did so much to extend. By his will he founded a triennial prize, and it is significant that he directed that the first subjects for inquiry should be upon the thyroid, the spleen, the thymus, the suprarenal capsules, and the state of the blood and blood-vessels in inflammation, all subjects on which he had himself made observations and conducted experiments. He foresaw that future workers, better equipped, would unravel the secrets which had baffled him.

The Hunterian era awoke in the minds of men a desire to explore the old ground by new methods, and to unearth the truths so long concealed. There was a spirit of adventure, like that which animated the Elizabethan explorers, the ambition of the healthy human intellect to extend its range of vision and knowledge.

To Hunter belongs the credit of the discovery of this new world. He it was who lighted the torch, and I hope I have shown that Astley Cooper was amongst those who first carried it forward in the race, kept it alight, and then passed it on not only undiminished, but burning with a brighter flame; and so when his course was run the goal was nearer for the part he had taken. "After brief life men die, and like runners in a race hand on their torch to another."

SUSSEX THROAT AND EAR HOSPITAL.—Reference was again made at the annual meeting of the governors of the Sussex Throat and Ear Hospital at Brighton on Feb. 5th to the need of an additional wing, but the proposal has been abandoned until better times. Rearrangement of the present accommodation, however, has provided five or six additional beds. The demands upon the hospital have again been very considerable during the year. Out- and in-patients have made increases in their payments during the year, the total increase from in-patients (500) amounting to £76 9*s*. 6*d*., and from out-patients (5000) to £32 9*s*. 11*d*.

An Address
ON
SKIN DISEASE
IN RELATION TO INTERNAL DISORDER.

Being the Opening Address delivered at a Discussion held on Feb. 14th, 1921, by the Medical Society of London,

BY SIR JAMES GALLOWAY, K.B.E., C.B., M.D. ABERD., F.R.C.P. LOND., F.R.C.S. ENG.,
SENIOR PHYSICIAN, CHARING CROSS HOSPITAL.

THIS subject has been attractive to trained and untrained minds from early times, and has proved to be sufficiently alluring to stimulate the interest of some of the most esteemed members of our own calling. I need only recall to your memory the work done in this field by members of your own school of medicine—Thomas Addison, Charles Hilton Fagge, and Philip Pye Smith; by others such as Jonathan Hutchinson, Stephen Mackenzie, and William Osler; the special studies by Henry Radcliffe Crocker, and by a secretary of this society whose knowledge of clinical medicine and whose personal character had a great and abiding influence on his colleagues and friends—Thomas Colcott Fox.

LOCAL CUTANEOUS INFECTIONS.

The attraction of this field of study to the trained physician is no doubt partly due to the fact that the knowledge of external and visible signs may lead to the interpretation of their hidden cause, the recognition, it may be, of a mysterious malady, to its treatment and the restoration to health of the sufferer. But the diseases which affect the surface of the body are in many cases the malady itself, and its cause need not be sought further afield than in the lesions which are visible. This is notably the case in many external infective diseases, and in certain of the abnormalities of growth and degenerative processes to which the skin is liable. Examples of these morbid states of purely local origin are the diseases recognised to be due to external parasitic infections, the diseases of the "ringworm group," for instance, due to growth in the skin of various hyphomycetes; many of the inflamed conditions of the surface included under the term eczema, and due primarily or secondarily to infection by pyogenic bacteria; in all probability also the inflamed and desquamative conditions of which psoriasis may be taken as the type disease. Examples of abnormal growth of tissue cells and of various forms of degeneration are seen in the primary neoplasms of the skin of epitheliomatous and other types.

All these may be considered as diseases affecting the integument itself. Their diagnosis, treatment, and prognosis demand chiefly an accurate knowledge of the structure and functions of the skin. In all such diseases, however, due, as we believe, to local causes only, he would be an unskilled physician who refused to take into cognisance the physical condition, the idiosyncrasies, and the mental state of his patient, and the manner in which these react on the external malady. Anyone who has seen the grave results of pyogenic infections in patients suffering from glycosuria, or of the extension of psoriasis during development of the later stages of pulmonary tuberculosis, and anyone who has made efforts to treat this disease of the skin in the case of patients suffering from certain forms of arthritis, will not require to be convinced of the influence exerted by general or internal disease on what appears to be a local cutaneous malady. "The conditions which modify the characters of inflammations of the skin and their influence on treatment" were ably discussed by Radcliffe Crocker in his Lettsomian lectures to our society (1904).

Passing from maladies, of which we believe the causes to be entirely external and local, and on which health and disease exert influences by raising or depressing the powers of resistance and of healing, I

wish to draw attention to cutaneous manifestations in many cases even more striking, but which must be regarded as phases or results of a general infective process or of some internal disorder.

THE ERYTHEMA GROUP.

The first group of cutaneous diseases to which I would draw attention is the "erythema group," a class sufficiently well defined for purposes of clinical recognition. The various forms of reddening produced by merely local, mechanical, or bacterial reactions are excluded. On the other hand, the manifestations of this group may be not only erythematous but also urticarial, exudative, vesicular, and hæmorrhagic in character.

Acute Exanthematous Diseases.

The eruptions of the acute exanthematous diseases first attract attention. In the case of some of these diseases the eruption appeared to be so important a feature in the minds of our predecessors that it may well have seemed to be the disease itself, hence we have such names as rubella, morbilli, scarlatina, and the varieties of pox. So soon, however, as modern ideas concerning the origin of infectious diseases were conceived, it followed that the visible eruptions came to be regarded only as a phase or as one result of an infective process, and to be considered merely as a sign of the disease itself, the true cause being capable of producing more extensive and serious results than the eruptive phenomena. The later development in our ideas of infection, the possibilities of lessened or increased sensibility of the tissues and of the organism to toxins of various sorts, including foreign proteins not in themselves primarily toxic, naturally caused doubt as to the actual origin of these exanthems.

At the present time the most reasonable explanation seems to be that the special eruptions of these diseases result from the direct action of the infecting elements, protozoal or bacterial, on the skin. The chief considerations which led to these conclusions are first that the eruptions are very distinctive. They differ from each other sufficiently in the case of each disease to be fairly easily distinguished so that they form an important factor in the diagnosis. The eruptions which form a part of the reaction of the organism to bacterial and other protein poisons conform to one type—namely, the type of the urticarial, erythematous, and exudative erythemas. In the case, however, of the exanthems, the types of eruption differ sufficiently to be clearly recognisable, as in the case of scarlet fever and of chicken-pox, and the distinctive eruption is "true" to the set of symptoms which we recognise as indicating the malady in any individual case. The second important consideration is that in the case of certain of these diseases the organism recognised as the cause of the disorder has actually been found in the exanthem, as in the case of enteric fever and of syphilis.

It is important and suggestive to remember that in the case of many of the specific exanthematous fevers other eruptions than those considered to be specific do occur at various stages in the disease, sometimes early, usually late. These eruptions are of the erythematous type, possessing the characters of general erythematous reactions and without the specific features.

Action of Alien Proteins.

Much interesting and important information has come to us from the study of the effects of the action of alien proteins on the tissues and on the organism. As is well known, some of the results which have been obtained experimentally are of the most dramatic character. In addition to the very serious effects upon the nervous, the cardio-vascular, the respiratory, and the gastro-intestinal systems, it is well known that an important series of skin phenomena occur. These consist of eruptions varying from transient urticaria and erythema to changes involving destruction of the walls of the small blood-vessels, exudation of the blood contents, and later, it may be, to reactionary changes in the tissue elements of the skin. From the point of view of the clinical symptoms, these phenomena resemble closely the eruptions of the erythema group.

In the case of certain infective fevers, special opportunities have arisen for the careful study of the effects of such proteins as a result of the use of alien antitoxic sera in treatment. The serum sickness which may result, its symptoms and consequences, may be considered as a fair example of the reaction of the body to the introduction of alien proteins. In this remarkable condition it is well established that there occur variations from the "normal" reaction, due to what is apparently increased or diminished sensibility of the organism to the action of the alien protein. These variations from the normal seem to exist as a congenital or a natural disposition in a small number of individuals, but more commonly the condition is artificially acquired, and appears to be due to the influence produced by previous administration of the same alien protein. There is thus presented to us a set of phenomena very different in nature from those of an ordinary infection, though it is probable that these conditions of over and under sensibility are closely related to the biological conditions underlying what we understand to be immunity or proneness to disease.

Two facts stand out clearly for our recognition from the clinical point of view: First, as the result of absorption of proteins alien to the invaded organism, eruptions make their appearance closely similar to the erythema group of skin diseases; second, that these eruptions vary in degree, severity, and time of incidence, and these variations depend on stages of increased or diminished sensibility which may be acquired by artificial methods. Recognising these salient points, we may see how large is the field of medical investigation which they indicate; moreover, they may serve to point out the path through a field of clinical medicine which is as yet little known.

Exudative Erythema.

Let us take examples of cutaneous eruptions as seen in clinical practice, and inquire what explanation can be given of their origin in terms of our present ideas of the effects on the tissue elements produced by parasitic infection, or by the action of alien protein poisons. The type of disease to which I now refer is erythema exudativum multiforme. This disease shows very similar and very characteristic manifestations throughout the range of its incidence. It consists, as is well known, of erythematous and urticarial eruptions associated with œdema and other forms of exudation, sometimes showing vesication, and is occasionally purpuric. An important feature of outbursts of the disease is the tendency to localisation of the lesions to certain localities, such as the extremities, the face, and extensor surfaces; in many cases considerable areas of unaffected skin extend between the reacting or damaged tissues. This disease has long been suspected to have relations in the sense of cause and effect with certain generalised infections or localised centres of disease. Sir William Osler was much interested in tracing these connexions, and reported a series of cases during a period of several years in which the occurrence of erythema exudativum was associated with visceral lesions. These internal conditions were various, some of the cases showed disorders of the gastro-intestinal tract, others showed cerebral symptoms, in some there was co-existing evidence of serious damage to the kidney, and in one or two evidence of localised inflammatory disease. By attempting to establish the frequency of the association of the two morbid states, external and internal, he sought to suggest a causal relationship. With our present knowledge it is, at any rate, intelligible that such a relationship exists. In the case of localised inflammatory visceral lesions we know that various toxins are formed, bacterial or protozoal in origin. These toxins, which exist within the parasitic cells, and on the dissolution of these cells find their way into the surrounding fluids, pass into the circulation and are capable of affecting the structures of the invaded organism, either generally or in areas specially liable to injury. In the case of the bacterial products it is

known that they have various destructive influences. Amongst the better recognised are the neuro-toxic, the thrombotic, and the hæmolytic toxins, and it is also known that they have a special power of damaging the endothelium of the capillaries and the small arterioles. Such poisons arising from any infective focus in the body may act on the tissues in a very direct fashion analogous to the action produced by such toxins as those of the "venin" group. It is, therefore, not a matter of surprise, given a focal lesion, such as suppurative inflammation of the naso-pharynx or a circumscribed empyema of the pleura, that toxins are liberated which will produce damage to the endothelium of capillaries, associated with hæmolytic or thrombotic effects, in certain areas specially liable to damage, and thus cause the manifestations as we see them in exudative erythema.

Disorders of the Gastro-intestinal Tract.

In the case of the disorders of the gastro-intestinal tract, which are apparently so frequently associated with these cutaneous manifestations, the same influence of bacterial origin may be at work. Bacterial or other parasitic toxins escape from the gastro-intestinal tract into the circulation and produce the changes at a distance such as those already mentioned. It is, however, possible that in the case of the gastro-intestinal tract another cause of poisoning may exist—namely, that the damage to the gastro-intestinal tract may permit of protein substances passing into the circulation directly from the food. These proteins do not pass through the stages of normal digestion whereby they are rendered safe and useful to the body, but escape into the circulation more or less in their original form with comparatively unaltered protein molecules, and thus act as alien proteins. There is plenty of evidence of the highly toxic effects produced by the parenteral introduction of alien proteins; substances passing into the circulation from the gastro-intestinal tract in the way suggested may act in a similar manner. It is in this relationship that the studies of the reaction of serum sickness are so suggestive and valuable. The erythematous eruptions which are found associated with gastro-intestinal disturbance resemble closely the eruptions in the skin following the introduction of alien proteins in the form of antitoxic and other alien sera. In the case of both sets of poisons, the toxins of parasitic origin and the alien proteins, the possibility of increased sensibility or of diminished sensibility must be borne in mind.

We have, therefore, presented to us the very important suggestion that general or focal infections are capable of admitting into the body toxins producing destructive influences, and also that substances resembling more closely the alien proteins producing the protein reactions—serum sickness and analogous conditions—may also find their way into the circulation in visceral disease. Both these sets of poisons are capable of damaging the tissues, especially the blood and blood-vessels, in such a way that the diseases of the erythema group may be understood to occur. Many of the clinical phenomena, such as the distribution, incidence, the recurrence of these cutaneous manifestations, can be explained by the possibility of increased or diminished sensibility of the affected organism.

Erythema Nodosum.

Erythema nodosum is a remarkable affection possibly related closely to the erythema multiforme group. As is well known, this manifestation has long been suspected in this country to have special relationship to rheumatism. Sir Stephen Mackenzie was a strong upholder of this view, and by recording a series of cases in which the conditions co-existed he sought to suggest their causal relationship. I had the advantage of being his house-physician, and I recollect that he would declare on examining a case of erythema nodosum that there was no need to search further for the nature of the disease from which the patient suffered—that the eruption on the skin was as much evidence of rheumatism as the peculiar arthritis, or an attack of pericarditis or endocarditis. Probably most of us at the present day would not uphold the proposition in such an uncompromising manner. Erythema nodosum occurs in cases where there may be no other evidence of acute rheumatism. Failing to recognise the evidence of acute rheumatic fever, it would be unwise to bind erythema nodosum and rheumatism too closely together. But erythema nodosum is remarkable among the erythemas for the constant similarity of the lesions constituting the disease, differing considerably from the features of a typical "erythema." It may be possible that erythema nodosum is a "true" eruption, a manifestation of a specific circulating poison producing local damage, just as the special eruptions of the specific fevers.

Lupus Erythematosus.

There is another disease not properly included in the erythematous series to which I must call attention in this place—namely, true lupus erythematosus. This disease shows certain relationships with the erythematous group in the manner of its occurrence and in the area of its distribution, but it varies widely from the erythema type inasmuch as the lesions are long lasting, and that a certain amount of destruction of tissue is ultimately noticeable. In addition to the long-lasting erythema fibroid changes make their appearance, so that a certain amount of scar is noticeable to the naked eye in a large majority of cases. This disease has long been suspected to be the result of a general infective process. The absorption of toxins from quiescent tuberculous foci is thought by some to be the cause. On the other hand, the disease occurs sometimes in its most widespread and most dangerous manifestations where there is no evidence or suspicion of tuberculosis in the ordinary sense. One of the most severe cases in my own experience occurred in a patient who gave no evidence of tuberculosis, but who developed marked signs of cirrhosis of the liver soon after the appearance of the widespread eruption; to the effects of this disease she ultimately succumbed.

New and interesting information as to the cause of this mysterious skin infection has recently been obtained by the observations and experiments of Dr. Harold Barber. Dr. Barber has found lupus erythematosus coexisting with localised pyogenic infections. In one remarkable case he was able to prepare an autogenous streptococcic vaccine from the excised tonsils of a patient suffering from lupus erythematosus. The use of this vaccine provoked marked local reactions on the skin lesions, a result which is perhaps not to be wondered at; but more important was the fact that the continued use of the vaccine was followed by the disappearance and cure of the cutaneous malady.

The Pemphigoid Group.

There is another group of skin affections to which I would draw attention in this relationship, the so-called pemphigoid group, of which dermatitis herpetiformis may be looked upon as a type. In these cases there are eruptions on the skin of very similar type, localised erythema and urticaria, followed by various degrees of vesication, and frequently associated with pain or disturbance of sensation in the affected parts. This disease has long been suspected to be due to toxic processes of internal origin. Perhaps the most remarkable of the forms of the disease is that occurring in pregnancy known by the name herpes gestationis or the dermatitis herpetiformis of pregnancy. I do not think that anyone who has had the opportunity of seeing such a case, and of noting its coincidence with pregnancy, its waxing and waning with the period of gestation and the puerperium, can avoid the conclusion that the two conditions are intimately related. It is only recently, however, that any approach to a definite explanation has offered itself. With our knowledge respecting the relationship of the embryonal and maternal structures it is fair to assume that embryonal cells and their products may act as an alien protein. During the process of growth and absorption of the placental villi the proteins of the syncytial layers may be absorbed into the maternal circulation producing poisoning directly, or, on the other hand, a process of sensitisation of the tissues of the mother may take

place, and at certain stages of pregnancy, due to the absorption of syncytial proteins, there are produced the lesions of the skin characterising one of the most distressing of the complications of pregnancy—namely, herpes gestationis. That the duration and severity of the disease increase with successive pregnancies is a strong suggestion that the maternal tissues become sensitised to the proteins of the embryo.

THE SKIN AND ITS BLOOD-VESSELS.

That the skin depends immediately for nutrition on its blood-vessels is obvious, and it has long been recognised that destruction of the skin and underlying tissues of the most severe nature occurs as the result of disease of arteries and veins. Morbid conditions due to stagnating peripheral circulation, such as redness, cyanosis, and œdema of the extremities, with alterations in the secretions of the skin, are not only unsightly and difficult to bear, but they produce weakening of the surface, so that pyogenic infections easily occur with serious consequences. These conditions are most commonly seen in the extremities. Rarely a similar state may be observed affecting the whole surface, associated with tachycardia and low blood pressure. The sufferer is in miserable health and death occurs from this cause alone. Such disorders of the circulation show certain similarities to true Raynaud's disease, though the pathogeny may be very distinct. Disease of the skin associated with functional disturbance of the blood-vessels requires much further observation and study before we can profess to understand its causes.

Thrombo-angeitis Obliterans.

Disease of the blood-vessels causing obstruction to the supply or to the return of the blood produces more easily understood changes from malnutrition, secondary pyogenic infection, and necrosis. Thus it may be claimed that the cause of gangrene of the extremities associated with senile, syphilitic, and other forms of occluding arterial disease is fairly well understood. There are, however, types of the disease concerning which our knowledge as to causation is still very defective. The noteworthy example is the strange disease of the blood-vessels causing necrosis of the extremities recently drawn attention to by Leo Buerger in New York and Parkes Weber in London. The condition, to which the name thrombo-angeitis obliterans has been given, occurs in young persons, nearly always of Jewish race. It appears to have no relationship with the ordinary causes of arterio-sclerotic change of the blood-vessels; its actual cause is still a mystery. The conditions which I have mentioned are the results of serious functional disturbance or of gross structural damage to larger blood-vessels. We are apt to forget that the supply of blood to the skin depends upon the minute blood-vessels, and that these small blood-vessels suffer degenerative changes, due to syphilis and other causes, just as those that are large. Microscopical examination gives evidence that the smaller arteries of the skin may be extensively diseased and disorganised; under these circumstances the skin, in spite of a fairly free collateral circulation, is badly nourished. The results are seen chiefly in the extremities; the skin becomes parched, the epidermis desquamates; coincidently, the white and especially the yellow elastic fibres degenerate, so that the skin loses its elasticity, and is seen to be in fine crackled wrinkles and folds. Under these circumstances pyogenic infection readily occurs; a spreading dermatitis, usually superficial and mild in degree in the first instance, is established; the condition then becomes described as "eczema," and the patient may be treated for this secondary result alone. Probably the state of affairs which I have outlined is the real basis for the condition spoken of by our predecessors as "gouty eczema." The spreading pyogenic dermatitis which we see is a secondary phenomenon only; the malnutrition of the skin, owing to sclerotic degeneration of the superficial blood-vessels, is the real disease. The generally accepted rules of treatment of many of the eczematoid diseases occurring in adults and older people require reconsideration. The local use of drugs supposed to have antiseptic effects in most cases does more harm than good; the fact that the eczematous state may be a secondary result of the vascular degeneration should be clear in the mind of everyone who is called on to treat such cases.

Permanent Dilatation of Arteries and Capillaries.

A very remarkable change in the superficial blood-vessels may be seen from time to time. It consists in permanent dilatation of the small arteries and capillaries, sometimes known as "nævi," but more accurately as telangiectases of various forms, affecting both the skin and mucous membranes. In some cases these occur in family groups, and there may under such conditions be a congenital weakness of the blood-vessels permitting these superficial dilatations to be formed. When these telangiectases are situated in the naso-pharynx or in other mucous surfaces the hæmorrhages may lead ultimately to fatal results. Some of these patients have been apparently wrongly considered to be examples of hæmophilia. In addition to this type, in which congenital defect seems to be the cause, very similar conditions producing widespread telangiectatic degeneration of the blood-vessels of the skin and mucous membranes occur in the course of long-lasting infective disorders, probably of diverse origin. Many of these cases, and perhaps the most severe, have been noted in connexion with infective conditions producing cirrhosis of the liver. They may form true angiomata with a central pulsing artery of supply surrounded by a lace-like network of dilated capillaries and venules. It may easily be understood that profuse and dangerous hæmorrhage may arise from injury to these angiomata.

THE SKIN AND DISEASES OF THE NERVOUS SYSTEM.

The nervous system, both central and peripheral, has long been held responsible for exerting influences on disease of the skin. It is easy to understand the way in which such opinions were formed. The skin is not only the integument, but, in addition to its other functions, is an organ of sense. It would thus easily occur to the minds of men that a close relationship existed when it was noted that injuries to nerves or to the central nervous system were associated immediately with alteration in cutaneous sensation—intensification, diminution, or complete loss—and it would not be difficult to conceive that the nervous system controlled the blood-supply of the skin, permitting of flushing, swelling, blanching, and shrinking as the effects of emotion, of excitement and terror, were noted. But although this co-relation of observations might well bring about the formation of the opinion, it is not an easy process to trace the actual influence of the nervous system on the tissues of the skin, even if such influences are strongly suspected to exist in individual cases.

Herpes Zoster.

The most noteworthy instance of close relationship is the interesting and well-known disease herpes zoster. The present evidence seems to establish clearly that this disease of the skin is associated directly with a peculiar, often hæmorrhagic, inflammation of the posterior root ganglia of the spinal cord and the analogous ganglionic structures. The peculiar destruction of the ganglionic cells is associated, on the one hand, with degeneration of their nerve connexions with the spinal cord; and, on the other hand, with changes in the neurons passing through the peripheral nerves to the skin. The very peculiar and characteristic lesions on the skin are slight, severe, localised, or extensive, depending upon the amount of damage to one ganglion or neighbouring ganglia. The well-known pre-herpetic, and especially the post-herpetic, neuralgia is evidence of the injury not only to the root ganglia, but to their nerve extensions. Accumulating evidence seems to point to the whole series of these morbid conditions being due to an infective process, of which the main brunt falls primarily on the ganglionic structures. It follows that true herpes—herpes zoster—must be distinguished from somewhat similar eruptions with

more or less clinical resemblance, such as the so-called "symptomatic" herpes occurring in pneumonia and certain other infective diseases.

Syringomyelia.

The series of cutaneous reactions and injuries associated with disease of the spinal cord and brain are, however, not so easy of explanation. The organic disease of the nervous system in which the cutaneous changes have received most attention is syringomyelia. In this condition it will be recollected that as the result of congenital malformation or of acquired conditions, an excess of neuroglia, resembling glioma, is found in parts, or it may be throughout the whole extent, of the spinal cord and its continuation into the brain. This new tissue is found in relation to the position of the original neural tube, and occupies, therefore, the posterior fissure of the cord, involving the central canal. The result of the formation of this abnormal tissue or of its degeneration is that important tracts of the spinal cord, through which sensory impulses coming from all parts of the surface are conveyed upwards to the brain, become dislocated and destroyed. It is probable that the structures controlling the nutrition and vascular supply of the skin may also become disorganised. The signs of this peculiar lesion appear in the extraordinary sensory cutaneous symptoms occurring in syringomyelia. From the clinical point of view two main symptoms are prominent: first, interference with the control of blood-vessels, especially the blood-vessels of the peripheral parts of the body, permitting of phases of relaxation, with redness, swelling, and œdema, or of spasm of the blood-vessels, when there may occur blanching of the extremities. Usually flushing of the extremities, with cyanosis, is the most marked feature. In process of time atrophic changes take place both in the epidermis and the cutis. With the disappearance of the œdema the very characteristic appearance described as "glossy skin" may be seen.

The second and even more striking series of clinical changes is due to the remarkable alteration in sensation. This is due to the fact that the position of the morbid lesion on the cord is capable of producing dissociation of sensations. The forms of tactile sensation early in development, such as of ordinary contact, and pressure—"muscular sense"—the knowledge of position in space and the shape and size of objects handled, may remain intact, while sensations, such as of pain, heat and cold, and superficial touch are lost.

It can thus be easily understood that patients suffering from this disease are extremely liable to unconscious injuries to the affected areas; they have lost the protection afforded by the appreciation of pain, heat, and cold: and the loss of vaso-motor control with consequent œdema and malnutrition permits of easy and severe pyogenic infection. In this way occur the painless whitlows, the destruction of the skin, the loss of deeper parts, injury to nerves, disorganisation of the joints, and the phenomena observed so closely and described in such an interesting manner by Dr. H. Morvan of Lannilis.

Although these disorders are witnessed perhaps in their severest forms in syringomyelia, changes of similar character occur in other diseases of the nervous system influencing the vascular supply, the nutrition, and the sensation of the body.

THE SKIN IN RELATION TO DISORDERS OF ABDOMINAL AND OTHER VISCERA.

From this wide field only a few examples can be taken. It is a matter of surprise, considering the close physiological relationships which exist between the kidneys and the skin, that disease of the kidney is not more often associated with manifestations on the skin. On thinking over the large number of cases of Bright's disease of various types which come under observation in hospital and elsewhere, very few examples occur to mind of skin outbursts occurring in the course of the renal disease. Certain erythematous eruptions do occasionally occur, and have been mentioned by various writers. Two important considerations require to be noted. In cases of severe disease of the skin, especially in cases of exfoliative dermatitis, albuminuria and nephritis occur. This complication has been frequently noted both in the case of children and in adults, and is not a matter for surprise. It appears that in cases of exfoliation of the epidermis the risk of generalised infections is intensified by the fact that these patients are unusually liable to chills and cold. Such patients should always be protected against cold in the most careful way possible. The appearance of albuminuria in such cases is always dangerous and not infrequently leads to a fatal result. The second observation in this connexion is noteworthy. On reading the series of cases of erythema multiforme collected by various authors, it is by no means infrequent to find a record of albuminuria, hæmaturia, and nephritis. I think the presumption in such cases is that the cutaneous disease and the renal disorder are manifestations of the same toxic cause and that it is not correct to assume that the symptoms on the skin are caused by the disease of the kidney.

Xanthoma.

Many remarkable manifestations on the skin occur during the course of disorders of metabolism. One of the most interesting of these is the condition known as xanthoma. It is probable that the varieties of this condition are all associated with functional disturbances of metabolism. The most important type is that known as xanthoma tuberosum multiplex, which occurs so comparatively frequently in cases of glycosuria that sometimes it is described as xanthoma diabeticorum. But it may be seen in patients who show no glycosuria, though in such cases there may be indications, functional or structural, of disorders of organs such as the pancreas and the liver. The histological structure of xanthoma has been carefully investigated on many occasions, and at first was not easy to understand. The tumours cousist of aggregations of newly formed cells conforming in type to the cells of the connective tissue, sometimes containing more than one nucleus; to these the name of xanthoma cells has been given, lending an air of special mystery to this peculiar growth. The cells suggest a reaction of the connective tissue to a mild non-pyogenic irritation. The interesting feature is that within the cells and in the intercellular spaces and channels granules of a fat-like material are to be seen. The tissue, as is not surprising, gives reactions indicating the presence of cholesterin, and it is said that cholesterin crystals or granules may also be seen.

The trend of these observations seems to point to the fact that in glycosuria and in allied conditions substances derived from the imperfect metabolism of the fats may be deposited at certain vulnerable points in the body, and by their presence produce local irritation of the connective tissue cells. Or, on the other hand, that poisons due to metabolic errors may damage these areas, and that the lipoid substances are formed locally in consequence and aid in the production of the characteristic xanthoma nodule. If this is so in the case of xanthoma it is probable that other reactions of somewhat similar type occur. In this connexion I should like to draw attention to the fact that lichen planus seems to occur with undue facility in certain patients suffering from glycosuria and in disorders of nutrition allied to this disease. The suggestion naturally arises as to whether the ætiology of lichen planus and certain similar reactions of the skin may not also be associated with metabolic disorders of this type.

Pigmentary Changes.

Pigmentary changes in the skin have long been associated with our ideas of the health of the patient. The fact that a patient loses his normal colour and appearance is recognised as an indication that all is not well, and in clinical records it is frequently noted that a "sallow" or "earthy" appearance of the patient develops during the course of illness. The nature of the pigmentation producing the varieties of jaundice resulting from the staining of the tissues by the bile pigments is fairly well understood. We know that in addition to the true bile pigment the skin may also be

coloured by other blood-derived pigments, such as urobilin. Still more recently it has been recognised that the tissues may be stained by pigments more remotely derived from the blood pigments in disease affecting the spleen, the liver, sometimes associated with glycosuria; we occasionally see examples of bronzed diabetes and of hæmachromatosis associated with certain types of splenomegaly. In addition, however, to these pigmentations, which are capable of explanation, there occur a series of disorders of pigmentation in which the colouring material is not derived directly from the blood pigment, but appears to be due to the formation of true melanin, the normal pigment of the body. A familiar example is the waxing and waning of pigmentation in certain parts of the body during pregnancy, the chloasma uterinum. But the most remarkable cases of increase of pigmentation occur in the course of Addison's disease. The newly deposited pigment is apparently true melanin, and its increase seems to be the direct result of disorder of the function of the suprarenal gland. It is known that pigmentation of exactly the same type may occur without the ordinary symptoms of Addison's disease. In a case under my own observation the patient, a young woman, suffered from great ascites, was severely ill with loss of weight and strength; the skin was widely pigmented, as in Addison's disease. The abdomen was opened, the abdominal fluid removed, and evidences of a mild, chronic peritonitis were observed. No opinion was formed as to the actual cause of the peritonitis. This patient, however, fortunately made an uninterrupted recovery and returned to her work as a school teacher, and remained under observation for some years. She gained strength, and at first gradually, then more rapidly, the abnormal pigmentation of the body vanished. It is very probable that some of the cases of leucomelanodermia which come under observation from time to time are associated with disease or disorder of the abdominal viscera in the neighbourhood of the suprarenal gland. It is interesting to recall that, just as in the case of xanthoma, in which there is reaction and overgrowth of tissue elements owing to irritation due to metabolic error, so in the case of these abnormal pigmentations the affected parts may react and increase in thickness owing to the formation of a certain amount of new tissue. The remarkable disease known as acanthosis nigricans, proved to be frequently associated with organic disease of abdominal viscera, appears to be an example of this sequence of events. With regard to this remarkable series of pigmentary diseases, the suggestion naturally arises in the mind, and is supported by a considerable body of clinical observation, that alterations in the distribution and amount of melanin pigmentation is directly associated with disorders or disease of the suprarenal gland and certain other glands producing "internal secretions."

Skin, Blood, and Lymphatic Glands.

In a review, however short, of the relationships we have been discussing, one cannot fail to refer to the change in the skin associated with disease affecting the structure of the blood and certain hitherto unknown affections of the lymphatic glands. The two conditions, lymphatic leukæmia on the one hand and the lympho-granulomatosis known as Hodgkin's disease, may be taken as examples. In both these conditions, differing so widely in many of their clinical symptoms, two sets of phenomena affect the skin. The skin in both may show tumours, lymphoid nodules in the case of leukæmia and lympho-granulomata in the case of Hodgkin's disease. In addition they both show remarkable cutaneous reactions without definite tumour formation. The skin may become erythematous and thickened, with symptoms of the most intense pruritus. There are few disorders of the skin so distressing as the pruriginous manifestations of both leukæmia and of Hodgkin's disease. They are, as is well known, frequently associated with characteristic fever. The evidence seems to point strongly in both cases to the infective origin of the classes of disease of which lymphatic leukæmia and Hodgkin's disease are examples.

A LOCAL SURVEY OF ENCEPHALITIS LETHARGICA.

BASED ON 32 CASES OCCURRING IN MANCHESTER DURING 1920.

BY W. ST. C. McCLURE, M.R.C.S., L.R.C.P., D.P.H.,
ASSISTANT TO THE MEDICAL OFFICER OF HEALTH, MANCHESTER.

IN view of the varying types of this disease which have been reported in different parts of the country, it seems desirable that some account of the incidence, distribution, and symptoms noted in a series of 32 cases occurring in Manchester during 1920 should be recorded.

The name encephalitis lethargica is apt to mislead, because, although lethargy is present in many cases, yet it is not an essential symptom, and it may be that, on account of the use of this term, cases occurring without lethargy have remained unrecognised, and have not, in consequence, been reported. During 1920 and in the early weeks of 1921, 39 cases, in which the date of onset of illness was in 1920, were reported to be suffering or suspected to be suffering from this disease. After investigation and observation 32 were accepted as true cases, some other diagnosis being subsequently arrived at in the other seven. Five of these seven cases ended fatally, and by post-mortem examination or by positive findings in the cerebro-spinal fluid the cause of death was found to be cerebral abscess, cerebral tumour, cerebral hæmorrhage, tubercular meningitis, and cerebral softening. The symptoms in the other two were accounted for by influenza. There remain 32 cases in which the diagnosis was accepted as correct.

The epidemiology and pathology of the disease are known to a limited extent only, and up to the present time no causal organism has been isolated. From analogy with similar diseases it seems likely that the illness is brought about by some infective micro-organism. Nevertheless, there has not been in Manchester any spread of infection from one person to another, nor has any connexion between the cases been discovered.

Seasonal and Local Incidence of the Disease.

The cases were distributed over the year, according to the dates of onset as follows: first quarter, 2 cases; second quarter, 8; third quarter, 3; fourth quarter, 19. In the second quarter 2 cases occurred in April, 3 in May, and 3 in June; reported cases then became few until November, when there were 3, and in the month of December the prevalence reached its maximum, 16 cases coming to our notice.

The cases were widely distributed over the city and no connexion between them was traced, although careful inquiry was made. The following figures show the incidence on the various districts: Ancoats, 2 cases; Central, 1; Cheetham, 3; Crumpsall, 3; Newton, 1; Clayton, 1; Ardwick, 1; Openshaw, 1; West Gorton, 3; Rusholme, 1; Chorlton-on-Medlock, 2; Moss Side, 2; Withington, 4; Gorton, 3; Levenshulme, 4. If the three divisions of the city be taken, 3 cases occurred in Manchester township, 8 in North Manchester, and 21 in South Manchester, the incidence rates being 0·30, 0·34, and 0·45 per 10,000 of the several populations. The 16 cases in which the onset of the illness was in December occurred in 12 different districts.

Infectivity.

The disease has shown no signs of infectivity—that is to say, no connexion has been traced between the cases which were widespread over the city, nor did infection spread to any of 138 family contacts. No common source of infection was found. As regards the milk-supply, for instance, of the 32 persons affected four habitually consumed condensed milk, and the remainder obtained their milk from 28 different sources; nor does transference by means of other foods seem likely, though our investigation in this direction is incomplete. Housewives and workers have been attacked in about equal numbers, scholars and infants have not escaped. It is certain that cases of encephalitis lethargica occur which remain unrecognise l

and escape investigation, and so connecting links may be missed. Nevertheless, the conclusion may be deduced either that the disease is not infectious or that the infective material is widespread, and that there exists amongst the majority of people a natural immunity to it.

Cases of poliomyelitis and of cerebro-spinal fever crop up from time to time in a similar manner. These two diseases are known to be due to infective micro-organisms, but no satisfactory explanation of their mode of spread is forthcoming. It appears that they may occur sporadically, or may, under certain unknown circumstances, assume epidemic form. Until our knowledge becomes more complete encephalitis lethargica should be presumed to be infectious or contagious and precautions taken accordingly.

Age- and Sex-Incidence.

Table I. gives the age-groups and the sex of those attacked and of those whose illness proved fatal. It

TABLE I.

Age-groups.	Cases.		Deaths.		Total cases.	Total deaths.
	M.	F.	M.	F.		
Under 10 years	2	3	2	3	5	5
10 to 19 ,, ...	7	4	2	2	11	4
20 ,, 29 ,, ...	2	2	1	0	4	1
30 ,, 39 ,, ...	1	2	1	1	3	2
40 ,, 49 ,, ...	1	4	1	2	5	3
50 ,, 59 ,, ...	3	1	2	0	4	2
—			Total		32	17

will be noted that males and females were about equally affected and that adults were attacked rather than children.

The question whether this disease is the same as, or a variant form of, poliomyelitis has been studied by a number of workers, and the conclusion arrived at on the evidence so far obtained is that encephalitis lethargica is a distinct entity. The data in the Manchester series as regards seasonal incidence, age of attack, and clinical manifestations tend to confirm this conclusion, but the number of cases dealt with is small and reliable inferences cannot safely be drawn. During the year only 6 cases of poliomyelitis were reported, 1 in July, 2 in August, 1 in September, and 2 in October. The entire absence of reported cases of poliomyelitis in November and December, when encephalitis lethargica reached its maximum prevalence, is a point to be noticed.

Occupational and Class Incidence.

Of the 32 patients 4 were infants, 4 scholars, 10 were women engaged in housework, and 14 were adults employed, each in a different occupation. There is nothing to be learned, therefore, by further analysis. The social status of those attacked may be gathered from a consideration of the size of house occupied by them, and by the presence or absence of overcrowding. The figures are given in Table II.

TABLE II.

Houses with—	No. of cases.	Number of houses with—		
		1 person or less per room.	More than 1 but less than 2 per room.	2 or more per room.
4 rooms	12	4	7	1
5 ,, ...	3	3	0	0
6 ,, ...	11	8	3	0
7 ,, ...	2	2	0	0
8 ,, ...	4	4	0	0

The greater number of cases occurred in houses with an average of one person or less per room, and the incidence is fairly well spread over the various social grades.

Symptoms.

It is only by the collection and study of the symptoms presented by a large number of cases that any reliable classification can be made. The symptoms found in the 32 cases under consideration and their relative frequency are therefore recorded here without much attempt to draw any general inferences.

General symptoms.—Most, but not all, began with symptoms of an acute infection, fever, headache, vomiting, pains in the body and limbs. Fever was not constant, and when present the temperature rarely exceeded 103° F., more commonly it ranged between 100° and 102°. In 11 cases it was absent altogether. This may be because the cases were not seen early enough but, in any event, the rise in temperature was, in many, a brief incident at the commencement of the illness. The absence of temperature is not necessarily of good portent; of the 11 cases in which it was absent, 6 died, 3 recovered, and 2 are yet ill. Headache was complained of by 16 patients, and 11 began with vomiting. Both headache and vomiting disappeared within a few days as a rule. In a few, headache was persistent throughout and in one case in which the diagnosis is still in doubt, vomiting has continued for several weeks. Pain in the limbs and body occurred in about half the cases as an initial symptom, and in rather less than this number pains of a more localised character, and probably nervous in origin, have been a marked feature in the later phases of the illness. General asthenia, becoming more pronounced as the disease progressed, but without any marked wasting, occurred in all our cases.

Duration of symptoms of onset.—The period elapsing between the appearance of the first symptom and the onset of prostration can be stated approximately as follows: 1 to 3 days—14 cases; 4 to 7 days—8 cases; 8 to 14 days—7 cases; 15 to 24 days—3 cases. It is not, therefore, generally speaking, a disease of sudden onset, as is the case with cerebro-spinal fever, and as a rule with poliomyelitis.

Nervous symptoms.—Lethargy, which became extreme at some stage of the illness, was a prominent symptom in 29 cases. In the remaining 3, although there was some hebetude of body, there was no inclination to sleep.

Paralyses.—Fifteen cases were associated with cranial nerve paralysis, and, in addition, 5 others complained of diplopia at some time during their illness. There were also cases in which the muscles of the face were relaxed and expressionless, due apparently to general asthenia. The various nerves were involved as follows: third, 4 cases; third and sixth, 2 cases; sixth, 1 case; sixth and seventh, 2 cases; seventh, 4 cases; seventh and ninth, 1 case; and possibly the fifth in 1 case. Paralysis of the third nerves was seldom complete. Squint or diplopia occurred in 13 cases, or in rather less than half of the total. Nystagmus of a coarse kind was present in 3 cases. The condition of the pupils and the pupillary reactions were found to vary at different stages of the illness, and gave no aid to diagnosis. The fundus oculi was examined in 17 cases and was unchanged in 11: the retinal veins were congested in 4, and in 2 there were signs of commencing optic neuritis.

Limb paralyses.—In no instance was there paralysis of the limbs, but in 2 cases the left arm was found weaker than the right, and in 1 case there was temporary paresis of the arm and leg on one side.

Positive nervous symptoms.—These symptoms did not predominate in our series. Convulsions ushered in the illness in 2 instances, bilateral twitchings of the lower face muscles occurred in 2, of the jaw muscles in 1, of a group of muscles in the upper arm in 3, and spasms of both arms in 1 case. Persistent headache or pains in some part of the body, usually the shoulders or back, were recorded in 8 cases.

Other symptoms and signs.—Hiccough was the initial symptom in 2 cases; buzzing in the ear was the first sign of illness in 1. Swelling and redness of one side of the face was noticed twice, and swelling of one leg once. Bowels were commonly constipated. Incontinence of urine was noted in 7 cases and retention in 3: paralysis of the sphincter ani was present in 5 cases. Skin eruption was seen only in 1 case, and in that instance it was of an acneiform character on the back.

The condition of certain reflexes was recorded in 20 cases as follows:—Patellar reflexes: about normal 10,

increased 2, absent 8. Plantar reflex: normal 16, extensor response 2, absent 2. Ankle clonus: present in 1. Kernig's sign: present in 5.

Results of Illness.

Of the 32 cases, 17, or about 53 per cent., proved fatal. The duration of illness in the fatal cases was as follows: Under 1 week, 5 cases; 1 to 2 weeks, 4 cases: 2 to 3 weeks, 2 cases: over 3 weeks, 6 cases. One was ill for 170 days, one for 74, and one for 57 days. Of the remaining 15 cases, 2 made a complete recovery, 7 have been ill for a few weeks and are still ill. The condition of the other 6 may be stated briefly:—

CASE 7.—M., 50. Condition nine months after onset: Face expressionless, head and shoulders bowed, limbs stiff, shuffling gait.

CASE 8.—F., 20. Condition nine months after onset: Mental depression, head and shoulders bowed, arms bent, stiff, and "sticky," paresis left shoulder muscles.

CASE 15.—F., 45. Condition three months after onset: General asthenia, paresis right arm and forearm.

CASE 17.—M., 22. Condition two months after onset: General asthenia, mental dullness, right partial ptosis.

CASE 24.—F., 42. Condition two months after onset: General asthenia, paresis right forearm.

CASE 32.—M., 17. Condition nine weeks after onset: General asthenia, mental dullness, and noises in ear.

Pathological Examinations.

The blood of two patients was examined for Wassermann reaction, with a negative result in one and a doubtful result in the other. Cerebro-spinal fluid was examined from 12 patients. In all it was clear; in one *Staphylococcus aureus* was said to be present; in the remainder no organisms were found. In one instance there were 159 lymphocytes per c.mm., in another 30. In the remainder there were either no cells or very few.

Post-mortem Examinations.

In two cases a post-mortem examination was made.

CASE A.—M., 28. Onset of illness, May 24th, 1920; date of death, June 10th. Illness began with hiccough, followed by headache and drowsiness progressing to extreme lethargy. Ptosis and left internal strabismus were present.

The following is a copy of a report upon the examination of the brain by Dr. G. D. Dawson, a worker in Professor S. Delépine's laboratory. The brain was sent for examination by Dr. T. E. Dickinson, acting superintendent of Monsall Hospital:—

"A brain, weight 1315 grammes, shape normal. There is general congestion of superficial blood-vessels. No evidence of meningitis. On section, the grey and white matter everywhere showed numerous small, dilated blood-vessels, the congestion is most pronounced in the pons and perhaps in the occipital lobes. No hæmorrhages or other lesions are visible to the naked eye. The ventricles are of normal size and do not contain any excess of fluid."

Microscopical Examination.

A. *Transverse section through middle of pons.*—"There is no evidence of meningitis. The most noticeable feature is the presence, especially in the grey matter, of numerous congested blood-vessels, mostly of small size. In most cases the perivascular spaces are distinctly enlarged: some are filled with small round cells, others contain a few extravasated red cells. Some hæmorrhages are present, but they are small and few. There is no clear evidence of any considerable degree of chromatolysis."

B. *Section through part of left occipital lobe.*—"The appearances are similar to those of section A, but less pronounced."

CASE B.—Male, 39 years; onset of illness, Nov. 14th, 1920, date of death, Jan. 26th, 1921. The illness began with pains in the "stomach" and vomiting. No headache, but pains in shoulders and back. Three weeks later there were diplopia and blurring of vision; ptosis of the left eyelid and left internal strabismus subsequently developed. There was little or no lethargy, but progressive asthenia ended in death.

A post-mortem examination was made. There was no evidence of meningitis, no deformity, no adhesions or thickening of the membranes. On section, no gross lesions were seen, though the posterior half of the brain was decidedly congested. The microscopical examination has not yet been completed.

I am indebted to those medical practitioners who allowed me to see their patients.

A CASE OF OSTEITIS DEFORMANS.

BY DOROTHY C. HARE, C.B.E., M.D. LOND., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, ELIZABETH GARRETT ANDERSON HOSPITAL.

With X Ray Report
BY C. C. BERNARD, M.A., L.M.S.S.A.,
HONORARY RADIOLOGIST TO THE ABOVE HOSPITAL.

THE patient, an unmarried woman, aged 47, is a native of Rangoon. Her mother was Armenian, her father Eurasian; she was healthy, though not robust, as a child and young woman. At the age of 26 she had both ovaries removed for uterine fibroid at Madras Maternity Hospital by Sir Arthur Branfoot, after which she is said to have had fair health; but between the ages of 30 and 40 she had attacks of "kidney trouble" and recurrent fever diagnosed as malaria. At about the age of 42 she was told that her mitral valve was affected. The present affection of the bones was first noticed about June, 1917, when a nurse, who was massaging the patient, discovered that her right humerus and right femur were bent. The patient at this time complained of pains in the back, ribs, and ankles, and of general tenderness in the limbs. She went to the General Hospital, Madras, in October, 1917, where the disease was diagnosed as osteo-malacia. She was treated with calcium lactate, and during the next few months the pains and tenderness lessened, and have never returned so acutely since. She has, however, complained increasingly of pain in the lower part of the spine, relieved by lying down. She has been unable to walk far and is easily tired by exertion.

The patient's height has diminished progressively, and she is said to have lost at least 7 inches. The only written record is that in 1918 she measured 4 ft. 9 in. in her stockings; her present height is 4 ft. 7 in. The weight does not seem to have varied much, being 102 lb. in January, 1918, and 93 lb. in July, 1920. The head has gradually enlarged; the patient says that the increase in size was first noticed by her friends in the latter part of 1917, and that in 1919 it measured 23½ in. in circumference; the present measurement is 24½ in. During 1918 there was a return of kidney trouble, and small quantities of blood and pus were passed in the urine, which contained at times a red sediment. The patient says that she has suffered frequently from intestinal flatulence, but on the whole her general health has remained good.

Dietetic Habits.

Full notes on the patient's customary diet are recorded in view of the possibility that this disease may one day be brought into line with other bone diseases due to food deficiencies. The patient has always had plenty of eggs and milk. She is fond of meat and usually eats it twice a day. She has never eaten much vegetable, and would go for weeks without taking green vegetables, roots, or potatoes; but she has always eaten some fruit daily, such as mangoes, mangosteens, bananas, or plantains; apples, pears, or grapes have been eaten occasionally. She eats very little bread and does not care for sugar or sweets. She never takes meat fat, and very little butter; bacon has only been eaten recently. The patient has always been careful of her diet on account of indigestion, but made no alteration in her habits of diet before the onset of this illness. She suffered no shortage of any particular article of diet during the war.

Previous Treatments.

From October, 1917, for about six months the patient was treated with large doses of calcium lactate, 30 to 40 gr. daily. After that time the drug was stopped, as it was thought to be causing indigestion, but it has been taken at irregular intervals since. The tenderness of the bones disappeared whilst taking the drug. During 1918 the patient was given pituitary extract in tablet form, 2 gr. daily for about three months, but it was not taken with great regularity. The patient noticed no effects. The kidney symptoms were treated with an

autogenous vaccine of a coliform bacillus from November, 1919. Three series of ten injections each have been given. In March, 1920, the patient was recommended to come to England to see Dr. Louisa Hamilton, and was admitted to the Elizabeth Garrett Anderson Hospital on June 26th, 1920.

General Appearance.

The patient is a small woman, height 4 ft. 7 in., of a sallow, dark complexion; she is thin, with very poor muscular development, but not wasted. She walks with a stick, moving slowly and with caution, carrying the trunk forward and the head well in advance of the rest of the body. The back is bent and the legs bowed. The neck appears to be short, as the chin is bent down on the chest. The large size of the forehead immediately attracts attention. The expression of the face is intelligent and mobile. In conversation the patient shows a normal mentality, though she is emotional and nervous.

Skeleton.

Skull.—The cranium is enlarged and the forehead high and broad. The face bones are normal in appearance, but small in comparison with the size of the cranium. Teeth good.

Measurements.—Horizontal circumference at level of temporal fossæ, 24½ in.; circumference at level of occipital spine and frontal prominence, 24½ in.; antero-posterior circumference between same points, 15 in.; antero-posterior diameter between occipital spine and base of nasal bones, 7⅛ in.; maximum transverse diameter between mastoid processes, 7⅝ in.

Trunk.—The spine has a double antero-posterior curvature, with an exaggerated convexity backwards in the upper dorsal region and forwards in the lumbar region; thorax correspondingly flattened in front and abdomen short and wide; right clavicle thickened and the natural curves increased; pelvis slightly flattened and sacrum pushed forward.

Limbs.—Right humerus bent forwards and slightly outwards and thickened; left humerus shows a very slightly increased curve. No change detected in bones of forearms or wrists; in right hand first and third metacarpal bones are thickened and convex dorsally; other bones of the hands unchanged. Both femora show changes, being bent outwards and forwards and moderately thickened. No apparent alteration of the angle of neck and shaft. Measurement (with the patient in horizontal position) from tip of great trochanter to the vertical line from anterior iliac spine is 2½ in. Tibiæ bowed forwards and thickened. When patient stands with ankles touching, the knees are widely separated. Feet show no deformity; joints are unaffected and movements free.

Other Systems.

Circulatory system.—No evidence of thickening of the arteries; heart shows no enlargement and is regular in force and frequency. At apex the first sound is short, and there is a systolic murmur conducted outwards. At base a loud rough systolic bruit most marked in the pulmonary area. *Digestive system.*—As stated above, the patient has always been liable to flatulence, otherwise there is no abnormality. *Urinary system.*—No enlargement of kidneys can be detected; urine has always been normal while the patient has been under observation. *Blood.*—No anæmia. Wassermann test negative. *Nervous system.*—No abnormality noted.

FIG. 1.

Showing bowing of the legs.

FIG. 2.

Showing position of head, shortening of neck, and curvature of spine and right humerus.

FIG. 3.

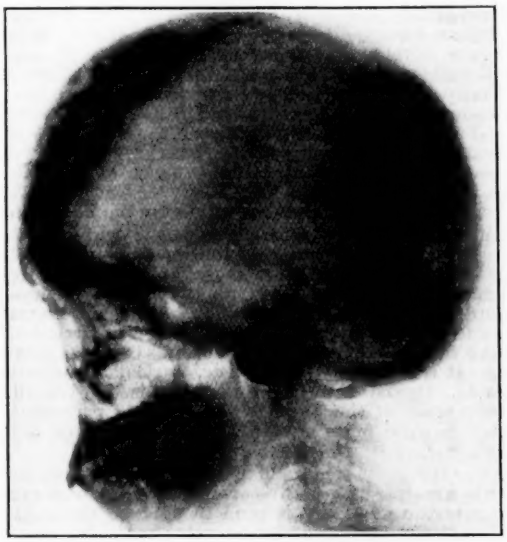
The right humerus.

Discussion.

The diagnosis in this case is of interest. Clinically the changes observed are fairly in accordance with those of Sir James Paget's[1] classical description, on which the differentiation of the disease as a clinical entity was first established. The insidious onset, chronic course, and relatively slight disturbance of general health, the conspicuous bending and thickening of the bones, tendency to symmetry in the changes, absence of arthritis, and above all the progressive enlargement of the cranial bones make up a diagnostic picture. The X ray examination of the skeleton, however, confirms the diagnosis and is in agreement with the reports of recent cases. Locke[2] and R. Abbé[3] both publish accounts in which X ray photographs of the skull are printed, and lay stress on the enormous thickening of the frontal, parietal, and occipital bones, with an indefinite woolly outline to

the shadow. The first writer remarks that this thickening may be disclosed by X ray examination when the head is not apparently greatly enlarged. Abbé considers that the X ray of the skull may in some cases be the only means of establishing the diagnosis. The differential diagnosis from osteo-malacia, however, rests not only on this condition of the skull, but on the changes in the long bones. In osteitis deformans the

FIG. 4.



The skull.

shafts of the long bones are gradually thickened and uniformly curved, whereas in osteo-malacia they are thin and atrophied and yield with an angular bend. No doubt at the beginning of this patient's illness the clinical diagnosis might have offered some difficulty, but by X ray examination the two conditions should be distinguishable even in the early stages. In a recent report on osteo-malacia and late rickets by Professor E. Looser,[4] of Vienna, the writer states that in osteo-malacia X rays show bony changes even in cases of moderate severity, and that in slight cases thinning of the wall of the shaft of the long bones is seen, and is especially plainly demonstrated in the hand. He publishes plates to confirm this. In contrast to these the radiogram of the hand printed herewith is interesting, showing as it does the dense thickening of two metacarpals, in an otherwise normal picture. Late rickets, according to the same authority, cannot be distinguished clinically from osteo-malacia, the differences lying in the age and rapidity of onset. Late rickets usually appears in adolescence, and osteo-malacia in young adults. The X ray appearances of these two diseases are indistinguishable. From these considerations there seems to be little doubt that the diagnosis in this case is osteitis deformans. The nature of the disease is still unknown, and its causes hardly even conjectured. The possibility of it being a syphilitic affection has been discussed by those qualified to give an opinion, and has been dismissed as unproven and improbable. The Wassermann reaction in this patient is negative. Other chronic infective conditions, deficiencies of diet, and disorders of internal secretions are all known as causes of bone diseases, but there is at present no certain knowledge of the causative factor in osteitis deformans.

I am indebted to Dr. Louisa Hamilton for permission to publish this case, and to Dr. C. C. Bernard for her coöperation.

X Ray Report.

The skeleton shows changes typical of osteitis deformans; these changes are most marked in the skull, the right humerus, the femora, and the lumbar vertebræ and the pelvis. The appearances of the bones are as follows:—

Skull.—The whole calvarium is much thickened in the frontal region to over 1½ inches. There are variations in the density of the bone, causing a mottled appearance, and a woolly outline. (See Fig. 4.)

Right clavicle.—The bone is about double the thickness of the left clavicle, and the normal curves are exaggerated.

Spine.—The lower three lumbar vertebræ have an irregular outline; the bone is increased in density and the normal structure is gone. The same changes are marked in the sacrum. The other vertebræ do not appear to be much affected.

Pelvis.—All the bones are thickened. The changes in the minute structure are most marked in the ischia and pubes.

Right humerus.—The whole bone is much thickened and is curved forwards. The medullary cavity is invisible, and the normal structure is completely gone except in the two condyles. (See Fig. 3.)

Right hand.—The third metacarpal is about twice the normal diameter; the first metacarpal is thickened in a less degree. There is no differentiation between the cortex and the medulla, and the minute structure is abnormal. All the other bones of the hands are unaffected. (See Fig. 5.)

FIG. 5.

The right hand.

Right femur.—The lower third of the shaft is much thickened, the upper third somewhat, the cortex and medulla being visible in the middle third only. There is a slight outward curve.

Right tibia.—The bone is thickened, the medullary cavity obliterated, and the minute structure abnormal. There is a curve forwards.

Left femur.—The bone is curved forwards, this being most marked in the lower third, where the bend appears to form a wide angle. The upper and lower thirds are much thickened with obliteration of the medullary cavity.

Left tibia.—There is a slight forward curve, and marked thickening in the upper and lower thirds. In the middle third there is some thickening of the cortex, and though the medullary cavity is present, it would appear to be in an early stage of the disease.

No changes are detected in the bones of the face, left clavicle, ribs, left upper limb, right forearm, fibulæ, and feet. There are also no changes in the bones entering into the joints. There is no evidence of calcification of the arteries. In the abdomen there is a shadow, probably due to renal calculus.

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AURICULAR FIBRILLATION:

SOME OBSERVATIONS AND DEDUCTIONS FROM A SERIES OF 400 CASES.

BY D. S. BRACHMAN, M.R.C.S., L.R.C.P. LOND., B.A., M.D. PHILA.,

ASSISTANT MEDICAL OFFICER, ROYAL CHEST HOSPITAL DISPENSARY; LATE RESIDENT MEDICAL OFFICER, NATIONAL HOSPITAL FOR DISEASES OF THE HEART.

OF all conditions treated at this hospital that of auricular fibrillation forms one of the most important, if not the most important group. It is found in no less than 25 per cent. of all patients admitted to the wards,[1] yet approximately 8 cases out of 10 are not fully recognised as such prior to admission, whereas even without polygraphic or electrographic help not more than 1 out of 10 should be missed.

The following observations are based on 400 cases of this condition, 110 of which were in-patients and 290 out-patients. The youngest was 16 years of age and the oldest 76.

In auricular fibrillation there is a lack of coördinate muscle contraction, and in its place individual fibres or groups of fibres contract incoördinately. Some of these individual stimuli are transmitted through the bundle system, and accordingly the ventricles contract unequally and irregularly and usually with increased rate. This is manifested not only in the complete irregularity of the heart, but also in the complete irregularity of the pulse. This irregular irregularity is the most important sign we have, and is almost pathognomonic of auricular fibrillation. The force of the individual beats varies, and it is usually found that some of the ventricle beats do not reach the wrist, hence it is necessary to take the heart-rate at the apex as well as the pulse, the latter being an index as to the number of efficient ventricle contractions. The greater the difference between the apex- and pulse-rates, the greater the number of inefficient beats, tending to ventricular exhaustion.

Differential Diagnosis.

There are two other conditions giving rise to an irregularly irregular pulse and which must be differentiated from auricular fibrillation, viz.: 1. Multiple premature beats, especially when auricular in origin. 2. Sino-auricular heart-block. In most cases of premature beats of ventricular origin there is an underlying regular rhythm, the contractions of which are practically always of equal force, recognised by continued auscultation at the apex, the premature beat usually being followed by a comparatively long pause. Frequently in these cases slight exercise will eliminate the premature beats, or at least sufficiently so for diagnosis, while in auricular fibrillation exercise almost invariably accentuates the irregularity. Rarely is it necessary to resort to polygraphic or electrocardiographic means for differentiation. In auricular premature beats, a rather infrequent condition, the diagnosis is made certain only by an electrocardiogram or polygram. Clinically, however, auricular premature beats may precede the onset of auricular fibrillation. Sino-auricular heart-block, on the other hand, is usually associated with an approximately normal or somewhat lower heart-rate, while in auricular fibrillation the rate is more often very rapid. Also in sino-auricular block the apex- and pulse-rates are the same, and there are long pauses in which the heart is completely silent. Sino-auricular block can be definitely differentiated from a slow fibrillation only by the electrocardiogram or polygram. It is, however, a comparatively rare condition. Another common irregularity, which ought not, however, to be confused with auricular fibrillation, is sinus arrhythmia. This is a regular irregularity in which the heart-rate usually increases during inspiration and decreases in expiration. This condition is very easily differentiated if watched for, and is frequently found in children.

Investigation of Pathological Condition.

Having diagnosed auricular fibrillation, the two essential points to consider are: (1) the pathological condition of the heart which led to auricular fibrillation; (2) the effect that fibrillation of the auricles will have on the circulation as a whole, and particularly on the left ventricle.

Post-mortem examination shows that there is almost always definite myocardial change, usually fibrosis in the wall of the auricles, interfering with the normal activity of those chambers. Furthermore, one has to determine (*a*) whether this myocardial change is confined to the auricles, or (*b*) whether the ventricles also are affected. Naturally, if the ventricles are involved, especially the left ventricle, the onset of fibrillation is a much more serious matter, because it is the left ventricle that is mainly responsible for the circulation.

In mitral stenosis there is very little doubt but that the left auricle is greatly handicapped, being possibly the only part of the heart muscle affected. There is usually dilatation and hypertrophy followed by muscle failure, ending in degeneration. The degenerated muscle becomes hyper-irritable.[2] When the irritability of the various groups of auricular fibres becomes greater than at the normal pace-maker, auricular fibrillation sets in. Occasionally there is a localised myocardial involvement of the auricles secondary to pericarditis, or, as is even more unusual, auricular damage alone may remain following a general infection.

After the onset of auricular fibrillation the ventricle-rate is a matter of great importance, for the more rapid the rate the more will it tend to produce myocardial exhaustion. The ventricular rate may be greatly influenced by emotion. This is shown clinically by the fact that the practical normal heart-rate of a patient fully under the influence of digitalis may be greatly increased by excitement or fright. The ventricular rate is also increased by exertion, and usually out of proportion to the amount of exertion, especially when there is marked muscle involvement of ventricle. If one compares the effect of emotion and exercise on the ventricular rate, one frequently finds that the heart-rate may go up much higher on slight excitement than after exertion—e.g., in one case a patient without continuous fibrillation was easily made to fibrillate by the breaking of an electric bulb or by the loud slamming of a door, but would not fibrillate on walking up five flights of stairs. Another patient, on the other hand, was easily made to fibrillate by either excitement or exertion, but would soon return to the normal rhythm.

Treatment.

The main object to be achieved when treating auricular fibrillation is to get the heart-rate at the level where it produces an adequate circulation without undue ventricular work, which is usually between 65 and 80 a minute. This is best produced by giving digitalis in sufficiently large doses to bring the heart-rate down to approximately 50 beats a minute, when the drug is stopped. The digitalis is then again started, but in a smaller dose, and gradually increased until the desired rate is procured. The resulting dose is continued indefinitely, with changes only as varied circumstances may require. Occasionally it is desirable to keep the rate nearer to 90 a minute, but here the prognosis is worse.

The great therapeutic agent in auricular fibrillation, therefore, is physical, mental, and cardiac rest. Cardiac rest is produced by the digitalis group, resulting in partial paralysis of the bundle of His, less impulses being transmitted to the ventricles. Associated conditions and symptoms, as hyperchlorhydria with wind in stomach, must also be dealt with.

[1] Patients considered suitable for admission include those suffering from acute valvular disease, chronic valvular disease, myocardial disease, advanced arterio-sclerosis, including secondary kidney involvement, advanced Graves's disease with myocardial involvement, acute infective endocarditis, aneurysm, &c.

[2] The normal cardiac contraction starts at the sino-auricular node at the most irritable area.

Analysis of Cases.

Turning to the actual detailed analysis of the 400 cases of auricular fibrillation, we shall consider: (1) Ætiology: (*a*) age- and sex-incidence, (*b*) pre-existing disease; (2) symptoms, relative frequency; (3) associated conditions; (4) X ray appearances, measurements.

1. *Ætiology.*—(*a*) Age and sex incidence. Of the 400 patients with auricular fibrillation examined 220 were males and 180 females, in the proportion, therefore, of 11 males to 9 females. From this it is apparent that one sex cannot be considered very much more susceptible to this condition than the other sex. Going into the ages of these patients, 265 of the 400 cases, or 66 per cent., occurred after 40 years, the largest number 112, or 28 per cent. of the total, occurring between 41 and 50 years. (See Table I.) (*b*) Pre-existing disease. Rheumatic fever is by far the commonest antecedent disease in auricular fibrillation, being found in no less than 123 (8 of which also had chorea), or 35 per cent. of the 348 cases in Table II. If to this we add the 14 cases of chorea alone, the cause of which is strongly affiliated with that of rheumatic fever, we have 39 per cent. of the total. On the other hand, there was a history of no previous illness in 66, or 19 per cent. of the total, a very appreciable factor and a distinctly important point in the matter of causation. Of the 46 cases giving a history of influenza, the actual cause is debatable, the severe forms of influenza being, however, of definite importance in cases with heart strain or where the heart muscle has been previously affected. Scarlet fever is not an uncommon disease in childhood; it is doubtful whether it is a cause of cardiac disease. A prominent observation in this series is that Graves's disease was found in ten cases, all of which were myocardial only.[3] The Wassermann reaction was taken in only definitely suspected cases and not as a routine, there being seven positive, in five of which the myocardium alone was involved. Apart from the subject of auricular fibrillation Table II. shows two outstanding facts which might usefully here be mentioned: (*a*) Rheumatic fever is much more likely to involve valves or valves and myocardium—such being the case in 109 out of 123 patients—than myocardium alone; (*b*) of the 14 cases of chorea (without rheumatic fever) all involved valves. In no case was the myocardium alone affected.

TABLE I.—*Age and Sex.*

—	Sex.	Age. 16–20	21–30	31–40	41–50	51–60	61–70	71–76	Total.
Out-patients	M.	3	30	34	42	41	12	0	162
	F.	4	18	26	37	33	5	0	123
In-patients	M.	0	14	14	15	9	1	5	58
	F.	1	7	14	18	12	5	0	57
Total		8	69	88	112	95	23	5	400

2. *Symptoms, relative frequency.*—There are no symptoms pathognomonic of auricular fibrillation, nor are there any that are much more suggestive of this than of other cardiac conditions. In the 400 cases used in this series (all in-patients) there were no leading questions asked, and the symptoms are those given by the patients practically unaided. It is very apparent here (Table III.) that the commonest symptom in heart failure is dyspnœa and that this symptom is found as often when fibrillation is absent as in its presence. The next two symptoms commonly met with are pain (under or across the heart) and palpitation. Pain is somewhat more common in the absence of fibrillation, while palpitation is found somewhat more often in fibrillation cases. Among the less usual symptoms, cough is twice as common, and insomnia four times as many fibrillation as in non-fibrillation cases. While nervousness is objectively common, it is but seldom complained of as a symptom. Subjective feeling of irregular beating of the heart has been mentioned as a common symptom, but in this series, shown in Table III., it is comparatively rare.

TABLE II.—*Pre-existing Disease.*

(A) Rheumatic fever. (B) No previous illness. (C) Influenza. (D) Rheumatism. (E) Chorea. (F) Scarlet fever. (G) Graves's disease. (H) Enteric fever. (I) Small-pox. (J) Diphtheria. (K) Syphilis.

—	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K	Total
Mitral disease ...	92	20	20	17	13	23	0	3	0	2	1	193
Myocard. disease ...	16	38	25	7	0	15	10	6	3	2	5	127
Aortic and mitral ...	11	5	1	4	1	0	0	0	0	0	1	23
Aortic	4	1	0	0	0	0	0	0	0	0	0	5
Total... ...	123	66	46	28	14	38	10	9	3	4	7	348

[3] "The Heart in Graves's Disease," by J. Strickland Goodall, Practitioner, July, 1920.

TABLE III.—*Symptoms.*

(A) Dyspnœa. (B) Pain. (C) Palpitation. (D) Vertigo. (E) Cough. (F) Weakness. (G) Insomnia. (H) Nervousness. (I) Choking feeling. (J) Fainting (unconscious). (K) Irregularity.

—	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
(1)	182	72	82	40	26	24	16	16	6	8	6
(2)	183	106	70	48	13	21	4	3	15	2	3

(1) = 200 cases of fibrillation.
(2) = 200 cases without fibrillation.

3. *Associated conditions.*—Of 359 cases: (*a*) 133, or approximately 37 per cent., had definite mitral stenosis; (*b*) 132, or approximately 37 per cent., appeared to be primary myocardial; (*c*) 65, or 18 per cent., had mitral regurgitation; (*d*) 24, or 6·7 per cent., had both mitral and aortic involvement; (*e*) 5, or 1·4 per cent. had aortic involvement only, including 2 cases with double aortic. From this one would infer that myocardial involvement alone is found associated with auricular fibrillation practically as frequently as pure mitral stenosis, although some authorities have stated that mitral stenosis is associated with most cases. If, however, we add the mitral and aortic cases having mitral stenosis, of which there were 10 out of 24, we have 143 mitral stenosis cases as against 132 myocardial, or only 8½ per cent. more in a total of 359 cases. Aortic disease alone accompanied auricular fibrillation in only 5 cases and is therefore comparatively unusual, while both mitral and aortic involvement occurred in 24 cases, or 6·7 per cent., of the total. (Table IV.) Group (*c*) consists of patients having only a distinct blowing systolic murmur at the apex transmitted to the axilla. Since most patients with auricular fibrillation are first seen at the hospital after fibrillation has commenced, there is no certain way of recognising those cases which showed a presystolic murmur before

TABLE IV.—*Associated Conditions in 359 Cases.*

—	Age. 16–20	21–30	31–40	41–50	51–60	61–70	71–76	Total
Myocardial	0	13	21	28	48	18	4	132
Double mitral ...	4	19	20	25	13	1	0	82
Mitral regurg. ...	2	5	19	14	20	4	1	65
Mitral stenosis ...	0	14	15	19	3	0	0	51
Mitral and aortic	1	6	4	7	6	0	0	24
Aortic	0	1	1	3	0	0	0	5
Total	7	58	80	96	90	23	5	359

—	Mitral stenosis and double mitral.	Myocardial.	Mitral regurgitation.	Aortic and mitral.	Aortic.
No. of cases ...	133	132	65	24	5
Per cent. ...	37	37	18	6·7	1·4

the onset of this change of rhythm.[4] If the second pulmonary sound is reduplicated or markedly accentuated and the electrocardiogram shows a right-sided preponderance, mitral stenosis is more likely to be present. A diastolic murmur at the apex not of aortic or exocardial origin is, of course, sufficient to diagnose stenosis. Also, considering the very large size of the heart in auricular fibrillation, especially of the auricles, it is apparent that some of the mitral regurgitation murmurs, in spite of all the signs of what is considered an organic lesion, are due to relative mitral regurgitation, as was the case in a recent post-mortem examination at this hospital. These cases would accordingly come under the heading of those associated with myocardial diseases.

4. *X ray appearances; measurements.*—All patients coming to this hospital are X rayed as part of the routine examination. With the tube 6 ft. away from the object the rays are practically parallel, and the image is then the same size as the object. For convenience in actual practice, however, it is desirable to place the tube very much closer to the patient and to allow for the distortion, and as used at this hospital the image on the screen is ¼ in. to ½ in. larger than the actual size of the heart. The size of the normal heart varies with age, sex, mode of life, &c., of the individual. Working on healthy hearts of young men under 30, Strickland Goodall showed that the average of the transverse diameters in a series of cases was 5¼ in., and this figure is taken as a standard in Table V.

TABLE V.—*Transverse Diameter of Heart.*

Fibrillation.		Without fibrillation.
One case with diameter to 5¾ in.	... ...	33%
16% with diameter of	5½ to 6 in.	26%
42% ,, ,,	6¼ to 7 in.	26%
24% ,, ,,	7¼ to 8 in.	11%
16% ,, ,,	8¼ to 9 in.	2%

The sign most commonly found in auricular fibrillation, next to irregular irregular rhythm, is enlarged heart, particularly the auricles being so. In the 117 cases detailed here, where the percussion figures were corroborated by X ray, and in which the actual measurements are given, only one heart showed a diameter of 5¾ in. or less. Therefore in practically every case the diameter of the heart was above the normal limit. Over 80 per cent. of the fibrillation cases showed a heart diameter of 6 in. or more, as against 40 per cent. in non-fibrillation cases, while 40 per cent. showed 7¼ in. or more, as against 13 per cent. in non-fibrillation cases. When in auricular fibrillation the heart is beating rapidly the apex-rate as a rule differs from the pulse-rate, and it is necessary to count both. (This is, therefore, a third sign to be looked for.) Since the apex gives the actual ventricle-rate, while the radial pulse gives only the rate of those beats that are sufficiently powerful to force the blood through the body, a rapid apex-rate leads to earlier ventricular exhaustion. This sign is of great importance in prognosis. As a general rule the greater the difference between the apex-rate and the pulse-rate, especially after exercise or emotion, the worse the prognosis.

The three signs of auricular fibrillation to be emphasised are thus: (1) Complete irregularity of the heart. (2) Increase of the cardiac diameter. (3) A difference in apex- and pulse-rate.

Prognosis.

Paroxysmal attacks of tachycardia occasionally prove to be attacks of auricular fibrillation, and may last only a few minutes to several days and then return to normal. There may be but one such attack in the patient's life, or there may be several, or, as is most usual, once fibrillation starts it continues the rest of the patient's life. If the ventricle, particularly the myocardium, is in good condition, and the rate has been kept down sufficiently to avoid exhausting it (at or near 70), whether by nature, rest, or digitalis, the auricles will continue to fibrillate until they become completely exhausted. The auricle waves in the electrocardiogram then become very small and fine, and ultimately disappear almost entirely. In other words, the auricles now become passive chambers and take very little active part in the cardiac cycle.[5] The ventricles, however, may continue to receive the impulses from the auricles through the bundle of His. Sometimes it is necessary to use a continuous drum over a comparatively long time before any auricle waves can be found. This condition is differentiated from a complete heart-block in that (*a*) the waves in the auricles will be found, if carefully looked for, usually as fine waves, however, while in a true complete heart-block practically normal P waves are present; (*b*) the rhythm of the heart continues irregularly irregular, while in a complete heart-block the ventricle usually takes on a regular rhythm; (*c*) the rate is usually higher than in the heart-block. It is thus apparent that the impulse starts in the sinus or some part of the auricle, that it is transmitted through the auricle and bundle of His to the ventricles, and that the auricles have almost completely lost their power of contractility. This state of affairs, though found in long-standing cases of auricular fibrillation, from a practical point of view is less inconvenient to the patient than when the auricles are actively fibrillating, and when the ventricle in spite of treatment continues to beat at a very rapid rate, or when the rate is greatly increased by the least excitement or exertion.

Summary and Conclusions.

1. The three most constant and diagnosable signs found in auricular fibrillation are: (1) the irregular irregularity in rhythm, (2) enlarged transverse diameter of the heart, (3) a difference in the apex- and pulse-rate.

2. An irregular irregular heart rhythm is almost pathognomonic of auricular fibrillation. It must be differentiated from that found in (*a*) multiple premature beats, especially those of auricular origin, and (*b*) sino-auricular heart-block.

3. There are no symptoms pathognomonic of auricular fibrillation, nor are there any much more suggestive of this than of other cardiac conditions.

4. A diagnosis of auricular fibrillation having been made it is essential to consider (1) the pathological condition of the heart which led to this condition, and (2) the effect that the fibrillation will have on the circulation as a whole, and especially on the left ventricle.

5. It is desirable to decide whether there is myocardial change in the auricles alone, or whether the ventricles also are affected. If the latter is the case, the prognosis is distinctly worse.

6. The main object to be achieved when treating auricular fibrillation is to adjust the rate of the ventricles so as to produce an adequate circulation without undue ventricular work.

7. The great therapeutic agent is rest—physical, mental, and cardiac.

[4] In these cases the murmur was due to the forcing of the blood by a more or less hypertrophied left auricle through the narrowed mitral opening. In auricular fibrillation this action is absent and hence the associated mitral stenosis both as a pathological condition and as the possible underlying cause of auricular fibrillation is often missed. Clinically, however, some patients with auricular fibrillation still give what appears as a presystolic murmur on auscultation. Leaving out of consideration Flint's murmur, a presystolic murmur rarely heard at the apex in aortic regurgitation, these can be divided into two types: 1. Those in which the presystolic is not a true recognised presystolic, but in which the diastolic murmur runs through the period of diastole into the following systole, the heart rest period being short. It is really, then, a diminuendo murmur instead of a crescendo murmur. When the rest period is long, on the other hand, the diastolic murmur ends as usual and there is a distinct interval previous to the following systole. 2. Among my cases there were two in which there was a distinct and true definite presystolic murmur not a prolonged diastolic, and in which there was also fibrillation. There was also a presystolic thrill palpable. The murmur and thrill were present only occasionally and of varying force. It was quite clear, however, that these did not have any relationship to the period between diastole and the following systole. It may be interred that there is a definite stage between the normal auricular contraction and a condition of auricular fibrillation. Though the impulses are generated there is not a definite complete contraction preceding and in normal relation to the ventricular contraction, but there are a sufficient number of groups of fibres contracting simultaneously to produce a distinct murmur on forcing the blood through the stenosed mitral valve at or near the time when the ordinary presystolic murmur of mitral stenosis would be heard were the heart not fibrillating. If the presystolic murmur had not varied one might have inferred that it was due to occasional periods of normal cardiac rhythm.

[5] It is interesting to note in this connexion that, according to some authorities, 40 per cent. of the ventricular filling in the normal heart is performed by the auricles.

8. The commonest antecedent disease is rheumatic fever. Rheumatic fever or chorea was found in 39 per cent. of the total number questioned, while 19 per cent. of the total gave a history of no previous illness. Graves's disease very definitely leads to fibrillation.

9. Primary myocardial involvement was found in as many cases as were associated with pure mitral stenosis. The other conditions in the order of their frequency were mitral regurgitation, both mitral and aortic disease, and lastly, aortic disease alone.

10. Fibrillation of the auricles can continue until the auricles are completely exhausted and become practically a passive chamber. The contractions may then come on only occasionally and be very slight, but impulses will still be transmitted to the ventricles.

11. There is no predisposition in either sex towards fibrillation.

12. As the pulse-rate usually does not give the ventricular rate of contraction, it is necessary in all cases of auricular fibrillation to count the apex-rate as well.

13. A murmur presystolic in time can be heard in some cases of auricular fibrillation associated with mitral stenosis, but this is usually due to a diastolic murmur running into the following systole when the rest period is short.

14. 25 per cent. of all patients admitted into the wards of the National Hospital for Diseases of the Heart have auricular fibrillation.

I have to thank Dr. J. Strickland Goodall for his invaluable help and kind interest in the preparation of this paper, and also Drs. R. O. Moon, S. Russell Wells, P. Hamill, and F. Price for permission to use the cases admitted under them.

PERCENTAGE AND FRACTIONAL DILUTIONS.

BY B. BLACKLOCK, M.D. EDIN.

(From the Liverpool School of Tropical Medicine.)

IN THE LANCET of Jan. 29th, p. 223, Dr. William Fletcher gives formulæ for preparing percentages of fluids and for fractional dilutions. Professor J. W. W. Stephens and Dr. S. R. Christophers gave 12 years ago[1] a simple formula for obtaining percentage dilutions. It shows the amount of diluting fluid which it is necessary to add to 1 volume of fluid of percentage x in order to reduce that volume to the desired percentage y. The formula is $\frac{x}{y} - 1$; where x represents the original percentage and y the desired percentage. Thus, to dilute a solution from 20 per cent. to 5 per cent. add to each volume of solution $\frac{20}{5} - 1 = 3$ of the diluting fluid.

The following formula can be used where it is necessary to prepare specified volumes of lower percentage or higher dilution from higher percentages and lower dilutions respectively.

Percentage dilution.—To prepare a specified volume z of a y per cent. solution from an x per cent. solution, take of the latter $\frac{z \times y}{x}$ volume and make up to z volume with diluting fluid.

Example.—To obtain 12 c.cm. of a 24 per cent. solution from an 80 per cent. solution, take of the latter $\frac{12 \times 24}{80} = 3{\cdot}6$ c.cm., and make up to 12 c.cm. with diluting fluid.

Fractional dilution.—To prepare a specified volume z of a $\frac{1}{y}$ dilution from a $\frac{1}{x}$ dilution, take of the latter $\frac{z \times x}{y}$ volume and make up to z volume with diluting fluid.

Example.—To obtain 60 minims of a $\frac{1}{100}$ dilution from a $\frac{1}{10}$ dilution, take of the latter $\frac{60 \times 10}{100} = 6$ minims, and make up to 60 minims with diluting fluid.

[1] Stephens and Christophers, 1908: Practical Study of Malaria and Blood Parasites, p. 441.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON NON-INFECTIVE THROMBOSIS OF PELVIC AND ABDOMINAL VEINS.

BY R. J. MORRIS, C.B.E., M.D. DURH., M.R.C.P. LOND.

INTRAVASCULAR clotting (thrombosis) may occur under imperfectly understood conditions; this is particularly true of non-infective thrombosis. The following case is illustrative; the cause is obscure, the termination unusual, and the difficulty of diagnosis from the initial symptoms is apparent.

M. D., aged 59, weight 15 st. 2 lb., height 5 ft. 11 in. Always had good health; no venereal disease; led an active athletic life; wore a double inguinal truss since April, 1918. No serious illness up to August, 1918, when he had an operation for appendicitis. Recovery appeared to be complete and satisfactory. He resumed military duty six weeks after the operation, and remained in excellent health up to April, 1919, when he had a severe attack of influenza affecting throat and chest. After four weeks he made a satisfactory recovery, and was in usual health up to Nov. 5th, 1919.

On the 5th he had much abdominal distension, slight abdominal pain, pain in area of prostate gland, congestion of penis and a very thin urine stream, took considerable time to empty the bladder; the congestion was less and the bladder was emptied with more ease in the recumbent position than when standing up. On the 6th, during a round of golf, he felt an acute pain over the left sacro-iliac joint. The next day the pain was more acute in the back, and he had a feeling of great abdominal distension, and some nausea and vomiting. On examination a fibrositic nodule over the left sacro-iliac joint, some tenderness over the gall-bladder, and slight œdema of right foot were found. Temperature normal, heart and lungs normal, pulse 68. No cause could be found for the distension and œdema, and there was no notable point in the history of the case except that he had been taking an aperient dose of Epsom salts in a glass of hot water before breakfast since the attack of influenza in April, 1919. No definite diagnosis could be made.

On the 8th he was seen by surgeon in consultation. Much abdominal distension. Dull continuous pain in abdomen; pain in back more acute; tenderness on pressure over the external abdominal rings. Examination per rectum revealed nothing. Condition remained the same up to the 11th, when in addition to the abdominal pain and distension acute pain commenced in right thigh, and pain over the femoral vessels in Scarpa's triangle. No tenderness on pressure. Œdema of both feet. On the 12th again seen in consultation. Abdominal pain and distension more marked. Temperature 99° F. Urine had trace of albumin, and on centrifugalisation a few red blood cells were seen. An elastic swelling found in right lumbar region. On the 14th left thigh became painful. Much tenderness in Scarpa's triangle. Temperature rose to 101·2°. On the 16th right thigh and groin more painful, and much œdema of both legs from hips to toes. No œdema of back. Temperature varied from 101·2° to 99·6° during the day.

On the 17th examination per rectum revealed nothing further than some ballooning and emptiness. Urine loaded with urates. Fluid appeared in tunica vag. testis. Acute pain to right of umbilicus. Temperature 99°. Œdema of legs increased, much pain in legs, no tenderness. On the 20th he was seen by surgeon in consultation. He found "a definite 'pappy' or semi-elastic swelling in right lumbar region, felt bi-manually in neighbourhood of right kidney." Discussion ensued on the possibility of the condition being inflammatory (diverticulitis). Temperature varied between normal and 99·8°. Castor oil emulsion by the mouth, and simple enemas were given daily; good result, and the tumour in lumbar region rapidly diminished in size.

By the 22nd condition improved: abdominal pain ceased; pains in both legs became less; œdema remained about the same and confined to legs; no œdema or swelling of back, and not higher than Poupart's ligament. Abdominal distension still continued. On the 23rd pains in legs and much abdominal distension, with pain and tenderness in right half of abdomen. Temperature 99·8°. On the 24th griping pain in abdomen caused restlessness, but less aching in legs, and less pain and tenderness in Scarpa's triangles. Temperature normal or subnormal. Blood examination: hæmoglobin, 92 per cent.; red cells, 5,200,000; white cells, 9100. Urine: minute trace of albumin, centrifugalised deposit showed red blood cells in small numbers.

On the 29th consultation with the two surgeons. Operation was discussed and the decision come to not to operate. Discussion followed on the probability of the tumour being malignant and partially occluding the inferior vena cava. From this date up to Dec. 4th condition remained about the same, œdema tending to subside. Pain and tenderness remained along the femoral vessels in both legs, in Scarpa's triangles, and Hunter's canal. Weight was found to be increased by 2 lb., accounted for by the fluid in the tissues of the legs. On the 12th patient was partially dressed and walked a little in bedroom; much aching in both legs followed and œdema increased. Notwithstanding this, he got up each day for varying periods and steadily improved from this date.

On Jan. 7th, sixty-fourth day of the illness, consultation of physicians and surgeons. Tumour in right lumbar region much smaller and difficult to locate. Change of air and scene recommended. Arrived Hyeres, France, Jan. 31st, 1920, and returned May 7th.

Present condition, December, 1920, more than 12 months since illness commenced: In good health. Tumour right lumbar region disappeared about Jan. 16th. Urine normal, slight congestion of penis remains. Weight 15 st. 9 lb., as compared with usual weight 15 st. 2 lb. Can walk well and play golf. Very slight œdema over the tibiæ occasionally and some blueness about the ankles at night, never present in the morning. Slight dilatation of superficial veins of anterior surface of abdomen. No varicose veins anywhere. He has discarded his truss and feels no inconvenience in consequence.

Remarks.

The cause of the condition in this case is obscure. The purging by daily doses of magnesium sulphate may have caused the original phlebitis in the hæmorrhoidal or veins of the vesico-prostatic plexus. The attack of influenza in April, 1919, or the appendicitis and operation in August, 1918, may have left some smouldering trouble, or pressure by the double inguinal truss worn regularly from April, 1918, up to the time of the operation, and after the operation up to Nov. 5th, 1919. The first signs were abdominal distension, congestion of penis, difficulty in passing urine, and pain in right groin about the position of Scarpa's triangle; then followed tenderness over the colon, much distension and partial paralysis of it, evidently due to interference with the venous supply, œdema of right foot, pain in right thigh followed by pain, swelling, and œdema of the whole leg, but no apparent inflammation of the femoral veins. On Nov. 14th the left thigh became painful, swollen, and œdematous, with pain along the course of the vessels. It is reasonable to conclude that the initial lesion was thrombosis of one of the veins of the vesico-prostatic plexus spreading to the internal iliac and thence probably to the inferior vena cava. It is difficult in this case to decide how far in this direction the thrombosis advanced, as there was no swelling or œdema of the back, or higher than Poupart's ligament in front. As the course of the case ended in recovery it is difficult to explain how resolution came about, and why the thrombus was non-infective. The highest temperature was 101·2°; it became normal about the nineteenth day of the illness and remained so. The diagnostic alternatives were malignant tumour, inflammatory tumour (diverticulitis), fibrous tumour or contracting cicatrix obstructing the inferior vena cava.

A SECOND ATTACK OF CHICKEN-POX.

BY FREDERIC HOLLAND THOMSON, M.B., C.M. ABERD.,
MEDICAL SUPERINTENDENT, NORTH-EASTERN HOSPITAL, TOTTENHAM.

MOST authorities in this country consider that a second attack of chicken-pox in the same individual is rare. For example, J. MacCombie, in his long experience, had never seen a case, and some observers seem inclined to be sceptical of its occurrence. Therefore, the following case may be of interest and seems worth recording:—

A. K., aged 5½ years, was admitted to this hospital in November, 1917, suffering from scarlet fever and with a history of having suffered from chicken-pox. On his chest and forehead were old scars identical with those left by chicken-pox.

In the ward in which he was resident the following cases of chicken-pox arose: L. B., aged 6 years, showed the eruption on Dec. 24th; R. F., aged 6, and D. V., aged 4, on Dec. 26th. A. K. developed a typical eruption of chicken-pox on Jan. 10th, 1918.

A NOTE ON THE "STERNO-HYOID" ARTERY.

BY LAMBERT ROGERS, M.R.C.S. ENG., L.R.C.P. LOND.,
DEMONSTRATOR IN ANATOMY AND HOUSE SURGEON, MIDDLESEX HOSPITAL.

Kocher believed one of the most important factors in operations for exophthalmic goitre to be avoidance of hæmorrhage. Referring to excision, he states: "The result really depends for success on the most careful arrest of hæmorrhage," a view thoroughly endorsed by Mr. James Berry and others. Apart from Graves's disease and old toxic goitres (so-called secondary Graves's disease), operations for simple goitres are often associated with much blood loss, and since thyroidectomies of varying extent are becoming more frequent, it may not be inappropriate to draw attention to a source of hæmorrhage in an unnamed, but relatively large, vessel shown by recent dissections to be a muscular branch of the superior thyroid artery. Moreover, reference to the literature has revealed only the briefest mention of the muscular branches of the artery.

The superior thyroid, after giving off its hyoid, superior laryngeal and sterno-mastoid branches, frequently divides into two trunks of almost equal calibre. This bifurcation has been noticed in the carotid triangle

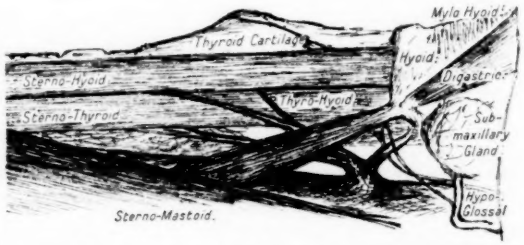


Diagram of artery.—In this case there is a common origin for the superior thyroid and the lingual. The branch to the sterno-hyoid is marked in black.

or immediately behind the anterior belly of the omo-hyoid but may occur farther forward in the muscular triangle. Of the divisions, the larger runs downwards and inwards behind the sterno-thyroid to end in the gland, the other superficial to this muscle lying in a groove between the insertion of the latter and the thyro-hyoid. In this position it gives off branches to the infra-hyoids and continues downwards in a more nearly vertical course, giving rise to the crico-thyroid artery, and may here give off twigs either to the lateral lobe or the pyramid where one exists. Of the muscular branches proceeding from this division by far the largest is that to the sterno-hyoid (see diagram). This branch enters the muscle high up, roughly at the junction of the upper and middle thirds, and on its posterior aspect.

Professor Thomas Yeates is aware of the existence of the artery, and has noticed it repeatedly, and Mr. Berry tells me that when he has to divide the sterno-hyoid muscle this vessel usually requires a ligature. Professor Kocher refers to the large anterior branch as a guide to the main trunk of the superior thyroid in ligating the latter, and it is from this branch that the sterno-hyoid twig arises. It is hoped that the description may be of use to workers in this region, since it would appear that this vessel is liable to damage in thyroid operations, particularly when division of the infra-hyoids is found necessary.

A CASE OF CHRONIC HYDROCEPHALUS SIMULATING HYSTERIA.

BY M. S. MONIER-WILLIAMS, M.A. OXON., M.R.C.S., L.R.C.P., LOND.

With Post-mortem Notes by HELEN INGLEBY, M.B., B.S. LOND., M.R.C.P. LOND.

THE following case appears of sufficient interest to be recorded:—

The patient, a man of well-marked neurotic temperament, enjoyed average good health until he joined the R.N.V.R. in 1914 at the age of 46. Exposure on anti-aircraft service caused frequent attacks of bronchitis, so that he was invalided out of the Navy. In the spring of 1917, he had a severe attack of influenza followed by meningitis according to the diagnosis of Dr. Philip Birch, who was then attending him, and of Dr. F. W. Tunnicliffe. He first came under my care in the spring of 1918 with the following symptoms: Chronic headache (dating back to the meningitis) and "a curious pain from between the shoulders up the spine to the back of the head." The pain was associated with nausea, and there were occasional attacks of retching, but no actual vomiting. He walked with difficulty, like a

very old man, "because his legs felt weak, and because it hurt his head to walk." He was inclined to be drowsy, and complained that he slept too much. He had a cough which caused intolerable pain in the head which, on examination, was shown to be due to bronchitis, and, as he breathed with difficulty, and air entry, particularly on the right side of the chest, was deficient, I sent him to Dr. A. C. Jordan for X ray examination. Dr. Jordan reported peribronchial fibrosis in both lungs, probably phthisical, the impairment being most pronounced on the right side. Sputum examined on several occasions by Dr. John Matthews showed no tubercle bacilli. The blood, also examined by Dr. Matthews, gave a negative Wassermann reaction. There was no optic neuritis.

A year later the patient's condition was much the same, except that he now suffered from occasional attacks of giddiness, was subject to slight febrile attacks now and again, had worse headache, and more frequent attacks of nausea and retching, walked with more difficulty, found it an effort to get in and out of chairs, talked at times vaguely and rather childishly, and had a strange manner, and an obviously failing memory. He visited St. Margaret's Bay, Dover, and was there taken suddenly with his final illness which lasted about six weeks. Constant giddiness and nausea, with much increased loss of power in the legs, was followed by vomiting, which was almost continuous for a fortnight, and there was steadily progressive vacant loss of memory. When the vomiting had abated he was brought back to London in a motor ambulance.

The diagnosis being extremely obscure, several consultations were arranged. Dr. Arthur Latham considered that he was not tuberculous and that the lung condition was an unessential part of his illness. Mr. Seccombe Hett excluded any gross lesion of throat, nose, and accessory sinuses. Sir James Purves Stewart found no evidence of any organic affection of the cerebro-spinal nervous system. The only objective abnormality he noted was a slight flattening of both pupils, so that they were not completely circular. He drew attention to the similarity of the patient's gait to that seen in hysterical conditions, and considered that the case was probably one of hysteria. Sir Humphry Rolleston offered no positive diagnosis, but made several suggestions, and named chronic hydrocephalus as a possible cause of the condition.

The patient's state now rapidly grew worse. He behaved as one suffering from dementia, and later developed incontinence of fæces and retention of urine. Catheterisation performed with the usual aseptic precautions was followed by acute hæmorrhagic cystitis, and coma of 24 hours' duration preceded death.

A post-mortem examination, at which Sir Humphry Rolleston was present, was performed eight hours after death by Dr. Helen Ingleby, who very kindly adds her notes.

Post-mortem Examination.

A thin body. There were old-standing adhesions of the right pleura, none of the left. The lungs showed a remarkable puckering and furrowing of their posterior surfaces at the level of the hilum, the upper halves of both lower lobes being the parts chiefly involved. In either lung a hard mass could be felt in the region of the hilum, and this on section proved to be due to extensive peribronchial fibrosis. Smaller areas of fibrosis were scattered throughout the lung tissue. The apices, however, remained free from disease. No signs of active tuberculosis were found, but calcareous changes had taken place in the peribronchial glands. Compensatory emphysema was in evidence in the non-fibrosed areas. The bronchi were somewhat thickened and dilated, but there was no acute bronchitis.

The heart showed nothing abnormal beyond slight right-sided dilatation. The vessels were remarkably free from atheroma. Below the diaphragm the most interesting lesion was in the bladder, which was full of blood, and showed severe hæmorrhagic cystitis with sloughing of the mucous membrane. The condition was apparently akin to the acute bedsore that sometimes develops in cerebral cases. The kidneys and prostate were normal. In the other abdominal organs the only noteworthy feature was a fairly marked perilobular fibrosis of the pancreas.

Cranium: The brain was moderately injected. Old adhesions were present between the lobes, and especially between the medulla and cerebellum. The pia-arachnoid was somewhat thickened. The brain substance was soft, and the ventricles distended with slightly opalescent cerebro-spinal fluid. The fluid was under considerable pressure, and spurted with some force through the infundibulum as the brain was being removed. All the ventricles, including the fourth ventricle and the aqueduct of Sylvius, were enlarged, and the foramen of Monro was about three times its normal size.

Microscopically the meningeal thickening was confirmed, the pia showing moderate infiltration with lymphocytes and plasma cells. No excess of cells was present in the cerebro-spinal fluid.

In the nerve cells the protoplasm was somewhat vacuolated and the Nissl granules disappeared from the cells in the cortex and in the medulla oblongata. Altzheimer's fuchsinophil granules were present in all the cells, but this appears to have no special significance. The nuclei were practically normal, so that one must regard the changes in the protoplasm as a terminal event. The microscopical findings thus confirm the naked-eye conclusion that chronic hydrocephalus and not structural alterations of the grey matter was responsible for the symptoms.

The total illness of the patient lasted a little over two years.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED MEETING OF CLINICAL, MEDICAL, AND SURGICAL SECTIONS.

GRAVES'S DISEASE: ITS MEDICAL AND SURGICAL TREATMENT.

A COMBINED meeting of these sections was held on Feb. 11th, Sir ANTHONY BOWLBY, President of the Clinical Section, being in the chair.

The Medical Side.

Dr. HECTOR MACKENZIE, who opened the discussion, spoke of the advantages offered by surgical treatment in saving patients from suffering for long periods of ill-health. He related two typical cases of long-standing exophthalmic goitre in which the patients had been treated medically; most of the symptoms and signs of the disease had disappeared, but in one case the heart had remained rapid and irregular, and in the other there was, as well, auricular fibrillation. It was generally admitted that most of the symptoms resulted from hyperthyroidism, and the problem presented itself as to what was to be done to reduce the over-secretion of the thyroid gland. There were two methods of bringing this about: (1) X ray radiation, and (2) by surgical treatment. He had tried X ray treatment in a considerable number of cases, but it was not until 1915 that he met with any convincing evidence of its efficacy. In this case the patient, after treatment in the X ray department, presented herself without any signs of Graves's disease, but evidently suffering from myxœdema. The goitre had entirely disappeared, the eyes were normal, and the heart was quiet. She quickly lost the symptoms of myxœdema under thyroid treatment and then appeared normal in every way. After this he had had a large number of cases so treated, but on the whole he considered the results as having been very disappointing. He had seen another case in which, although there was practically a cure, yet there resulted a severe X ray burn, followed by keloid growth. The cure, which was brought about by X ray treatment even in only a few cases, went far to establish the truth that the essential nature of exophthalmic goitre was hyperthyroidism. The conclusions he had come to from the results of his own observations were that in many cases there was no obvious benefit, and that even with many applications over a long period of time a cure was very rarely effected. The danger of X ray burning, too, must not be forgotten.

Dr. Mackenzie then considered the surgical treatment, the pioneer in which, he said, was Lord Lister, who, in 1877, removed the greater part of a goitre in a case of Graves's disease, in which the patient's life was in danger from suffocation. A few weeks later all the symptoms were alleviated, and it was recorded that after another 10 years the patient presented few signs of her former malady. This successful result encouraged other surgeons to perform similar operations, but the risks to life were found to be so considerable that for many years not many cases were treated in this way, at any rate in this country. Encouraged by the reports of Kocher and others he had now and again ventured to have recourse to operative treatment for his patients, but his experience was most disheartening at this time, for the operation under general anæsthesia proved fatal in a number of cases. Ligature of the thyroid arteries came into vogue in the first decade of this century, but, although comparatively safe, did not appear to him to be followed by such improvement as to make it worth while to go on with it. The introduction of local anæsthesia and advances in surgical technique led to a great reduction in the operative mortality.

At a former discussion of the Royal Society of Medicine on the subject Mr. T. P. Dunhill had reported a series of cases of exophthalmic goitre operated upon under local anæsthesia, and followed by most satisfac-

tory results; and in 1915 Mr. Dunhill had successfully operated upon a severe case of his (Dr. Mackenzie's), using a local anæsthetic. Mr. Dunhill had initiated the late Mr. Stewart Rouquette and, after his untimely death, Mr. W. H. C. Romanis into his technique, and with the collaboration of these various surgeons he (Dr. Mackenzie) had been able to apply surgical treatment to all those cases in which he thought it was indicated. He thought that the leading principle for selection of cases suitable for operation was that a fair trial had been given to medical treatment and that the case had shown no real improvement. Any surgeon who was unduly influenced by statistics would probably have declined to operate on most of them. Of 30 private cases successfully operated upon the average duration of symptoms before operation had been nearly four years, and the cases had all been more or less severe; some had required more than one operation. The usual immediate results following partial thyroidectomy were: (1) the patient became restful and tranquil; (2) there was an increase in strength; and (3) the heart's action became slower, but this might only come about gradually. When only one lobe was removed amelioration was sometimes the most which followed, and further operation was necessary to bring about the best result. The prospects of the patient with one lobe removed were much better than they would have been without the operation. Exophthalmos appeared to be the most persistent symptom, but although the eyes remained prominent the staring frightened look was lost. Among several hundreds of cases of operation, private and hospital combined, there had not been more than 2 per cent. of deaths.

Dr. Mackenzie then discussed the contra-indications to operation. One would have thought, he said, that auricular fibrillation was one, but he had had several cases operated upon in which this had been present and the result of the operation had been that the heart had become quiet and regular. He had ventured on operation in a case in which the patient was bordering on mental derangement, and after operation the nocturnal delusions disappeared. He thought that, as a rule, mental symptoms should contra-indicate. In the presence of undoubted diabetes operation should not be performed. Fear or dread of the operation was another contra-indication. He had seen one case in which an air raid had come on after the patient had been prepared for operation; the pulse went up to 200 and the patient died from fright. At the present time there were probably some members of the profession who were altogether opposed to the surgical treatment of exophthalmic goitre. They had exaggerated ideas of the dangers of operation, and they shut their eyes to, or were ignorant of, the benefits which it brought about, and possibly they expected more from the results of surgical treatment than experience justified. On the other hand, there might be some who would advocate surgical treatment without delay in every case. Both would be wrong in his opinion. The patient should have a fair trial of medical treatment, but if he or she did not improve within a reasonable time the possible benefits of surgical treatment should be mentioned and the patient given a chance of taking advantage of them. To his knowledge there was no other treatment available at the present time which offered so good a prospect of restoration to health and vigour.

The Surgical Side.

Mr. JAMES BERRY, who opened the discussion from the surgical side, said that he felt deeply the responsibility which devolved upon him in opening the debate from the surgical aspect and trusted that the statements which he would make would be regarded as but the expression of opinion of an individual based in the main upon his own personal experiences. By speaking somewhat dogmatically he hoped to evoke criticism and a good discussion. In 1914, in the *British Journal of Surgery*, he had gone very fully into the whole subject, and since that time his views had undergone but comparatively little change. A wider experience, however, had led him to take, on the whole, a somewhat less sanguine view of the advantages of operation than he did then, mainly on the ground of the tendency to relapse after even the most successful operation, and the incompleteness of the cure in many cases which at first sight seemed most favourable. He was glad to see at the meeting many surgeons of large experience in this branch of surgery who would doubtless tell of their own results and probably differ from him in many of his conclusions. He was especially glad to see there his friend Mr. Dunhill, who had recently forsaken the antipodes and come to place his talents at the service of this country. He would begin by making two statements which would not, he thought, be controverted by anyone who had had large experience of these operations.

1. That the usual result of an operation for exophthalmic goitre was that within a very short space of time, generally within a few days, the patient felt that she had derived *immense benefit* from the operation. The feeling of illness, of wretchedness, of depression quickly disappeared. The tachycardia often diminished very greatly, and might disappear completely in a few weeks. Exophthalmos was often lessened, although complete disappearance was much less common. The amount of benefit depended largely, but by no means wholly, upon the amount of gland that had been removed.

2. The operation for removal of an exophthalmic goitre, even when skilfully performed and carried out under the best conditions, involved *considerable danger to life*, a danger which was far greater than that for simple goitre. The mortality of these latter operations had now been reduced by most surgeons familiar with thyroid surgery to a mere fraction of 1 per cent., due to complications and accidents.

The operation for removal of true exophthalmic goitre involved a mortality of at least 3 to 5 per cent., and it was well known that many series of such operations, although mostly unpublished, gave a far higher mortality than this. Too much stress must not, however, be laid upon mere mortality. The disease was undoubtedly a very serious one and a mortality of even 5 per cent. was one that most patients suffering severely from the disease would willingly undergo if the operation offered a good chance of complete and permanent cure. He would like to state that he was speaking only of true exophthalmic goitre, and that he did not include those numerous cases of simple goitre accompanied, as they often were, by palpitation, tremor, &c. Such cases did not develop exophthalmos, and their inclusion in statistics of exophthalmic goitre was wholly misleading. They did not show the characteristic pathological changes in the thyroid gland, and the mortality of operations upon them was little, if at all, higher than it was in simple goitre.

Five Questions for the Surgeon.

He suggested for discussion: 1. What surgical treatment should be adopted for exophthalmic goitre. 2. When operation should be performed. 3. How it should be performed. 4. How the patient should be treated afterwards. 5. The question of relapse.

1. Of the numerous operations open to us he would confine himself to the only two which, in his opinion, had any real value—namely, removal of a portion of the thyroid gland, and ligation of thyroid arteries, the only two which he himself performed. Operations upon the sympathetic, exothyropexy, injections of boiling water and other substances into the gland he did not think worth discussion. The operation of removal of the thymus gland, which was always enlarged in cases of true exophthalmic goitre, was an operation much praised by some. It might be valuable, but he had no personal experience of it, and he did not think that sufficient proof of its value had yet been adduced. It was often very difficult or impossible to perform, and owing to the intimate relations of this gland to the innominate vein and pericardium the removal of any considerable portion of it must involve considerable danger. Ligation of the inferior thyroid artery he had completely abandoned, as it was a difficult operation, scarcely inferior in difficulty and danger to removal of a lobe, which was far more likely to cure the disease. Ligation of the superior thyroid had the very great advantage of being a comparatively easy, short and, on the whole, a very safe operation. He had not lost a case for more than eight years, during which time he had performed a large number of these operations. In itself it often did much to improve the

patient's condition and afforded the surgeon valuable means of judging whether he could, if necessary, proceed subsequently to the larger operation of thyroidectomy. It was most suitable for cases of large exophthalmic goitres in patients who were either acutely ill or suffering severely from visceral complications. But it could not be done with impunity in every case.

Mr. Berry showed the following table giving particulars of his operations of ligation of the superior thyroid artery for exophthalmic goitre during the years 1913 to 1919 inclusive:—

Hospital Cases Only.

Patients—Male 1, females 27; total 28.

Operations ...	Bilateral simultaneous ...	5 patients	= 10 arteries.	
	Bilateral at different times	14 ,,	= 28 ,,	
	Unilateral	9 ,,	= 9 ,,	
		28 ,,	= 47 ,,	

= 42 operations.

There were no deaths in any of these cases or in any of the private cases during this period. Nine of the patients subsequently underwent extirpation of one lobe. The main question of interest with regard to removal of the gland was how much should be removed. He had almost abandoned the practice of operating simultaneously upon both lobes, as in most cases he thought it involved too much risk to life. Nor did he now usually remove even the whole of one lobe. He always left a small portion at the hilus, and he liked to leave a good deal of the posterior capsule. Among other reasons, damage to the recurrent laryngeal nerve was much more likely to occur if the whole of the posterior capsule were removed. Enucleation or "shelling out" operations should, of course, never be attempted in any case of true exophthalmic goitre, except in those very rare cases in which true Graves's disease was superadded to an old encapsuled cystic or solid adenoma. These cases were quite distinct from those of the so-called "toxic adenoma," in which there was little danger more than that of any ordinary goitre operation.

2. When operation should be performed. There were, he thought, some surgeons who operated upon nearly every case, independent of the stage which the disease had reached and of the complications, especially cardiac, which might exist. Although personally he believed this to be a mistake, it would be interesting to learn what results, immediate and remote, followed such a practice. He believed that it was wrong to do thyroidectomy when the patient was suffering from very acute mental excitement, or when the visceral complications, especially myocardial degeneration, were very marked. But sometimes a mere ligation was permissible under conditions which would preclude the performance of the larger operation. In Graves's disease there were generally periods of remission during which operation might be undertaken with much greater safety than at the other times. It was just during the period of exacerbation when the patient, and often the general practitioner, and sometimes the physician, were most anxious for operation, and when the surgeon should resist the temptation to operate at a time when his better judgment should tell him that this ought not to be done. He would also add that operation should never be performed until the patient had been resting quietly in hospital or nursing home for at least a few days and had become accustomed to the new surroundings. On the other hand, he did not operate at any stage upon patients who were steadily and continuously improving, and especially upon patients, and there were many such, who did not feel at all ill. Operations under such conditions were, he thought, unnecessary. He never tried to persuade a patient to be operated upon against her own wish. The converse was very much more likely to occur, since he found that most really bad cases of exophthalmic goitre were only too willing to submit to any operation that afforded a prospect of cure. He never tried to "steal the gland" by not telling the patient when the operation was to be done. On the contrary, he thought that it was much better to gain the patient's confidence by talking to her frankly of the discomfort that she must expect to undergo, and that she would probably feel very ill for a day or two. By doing so a patient was much less likely to be frightened and excitable *after* the operation at a time when it was important that she should keep quiet.

3. How the operation should be done. The ordinary rules for removal of a goitre should be followed, the greatest possible care being taken with hæmostasis and, of course, with asepsis. No kind of antiseptic should ever be put into the wound. The question of anæsthesia was a very important one. He was coming more and more to believe that a very light open ether anæsthesia was preferable for most cases, although undoubtedly there were some in which local anæsthesia was preferable if the patient had sufficient resolution to stand what was undoubtedly a very disagreeable performance. There were some surgeons, he knew, and he thought more physicians, who thought that the use of a local anæsthetic was the main factor of safety in the operation. But it was by no means the only factor, and was not even, in his opinion, the main one. The method of operating varied a good deal according to the shape and size of the goitre and especially as regarded the size of the isthmus. The rigidity and solidity of the goitre and the presence of a thick isthmus often made the operation extremely difficult, especially at the stage of ligation, in its continuity, of the inferior thyroid artery. This was an important step in the operation, which was nevertheless sometimes impossible to execute. It was here that the aid of a really skilled assistant was most valuable, as he could sometimes, with one finger, control temporarily the circulation through this artery when it could not be reached for ligation. He would here express the opinion that except in some cases of acute intoxication and of myocardial degeneration it was usually hæmorrhage—sheer hæmorrhage—that was the main cause of death after removal of an exophthalmic goitre as ordinarily performed. Even a comparatively small amount of hæmorrhage which would be of little or no importance in a case of ordinary goitre might easily prove fatal in an exophthalmic one. He left the important question of the heart to be dealt with by Dr. Strickland Goodall.

4. The after-treatment might be summed up in the single word "water." The patient must be encouraged to drink large quantities (many pints) of water, or if a general anæsthetic had been employed, large quantities of saline solution must be introduced into the rectum by the continuous-drop method, care being taken that the rectum was never distended. In one rather exceptional case of his, which recovered, as much as 18 pints of fluid were absorbed in the first 24 hours, but the absorption of 8–10 pints of fluid in this period was not unusual. It was here that the services of a skilled nurse, trained in the after-treatment of these cases, was most valuable. Drugs were of little value in the after-treatment, as far as he was aware.

5. Relapse. There was no doubt that a good many patients who had made good recoveries from the operations and had remained well, or practically well for considerable periods of time, were liable to relapse, and they might even die of the disease. In some of these cases a second operation was advisable, more gland being removed. But there was a limit to the amount of gland that could be removed, lest the ultimate condition of the patient, although different, might be as bad as, or even worse than, the first. Some of the operations, the results of which were recorded in the table (shown) were second operations, a primary operation having previously been performed either by himself or by other surgeons.

A table of the ultimate results of 79 operations (upon 78 patients) for removal of true exophthalmic goitre (excluding mere ligations) during the seven years, 1913–1919, was shown; 53 of the patients were practically well, 18 were much improved, 3 were but little or not at all improved, 1 was worse, and 3 died as the result of the operation. Several patients who had undergone operation were exhibited, together with photographs and pathological specimens.

Outlook Apart from Operation.

Mr. T. P. DUNHILL spoke on three aspects of the question: (1) the grounds on which he considered some intervention other than medical to be necessary in some cases; (2) what degree of improvement could be obtained by surgical methods; (3) what permanence one might expect in this improvement. With regard to the first point as to whether there was any necessity to consider surgical treatment, he said that death was not the only tragedy in Graves's disease. The late Mr. Jessop had collected 25 cases of Graves's disease in which an eye was lost, due to ulceration occurring through the extreme proptosis. He himself had had two cases in which an eye was lost and another in which haziness of the cornea resulted. He had seen auricular fibrillation in many cases and had known it develop in at least three cases while they were under medical supervision, and he had known many cases of generalised œdema. Not all cases should be operated upon, for we all recognised that some cases recovered. When we had discovered which recovered, and why they recovered, we should have learnt much. We did not know the factors which enabled some individuals to recover an equilibrium—a glandular and nervous balance. No single drug would bring it about. The idea of operation was not to be entertained until (1) removal of every toxic focus, (2) rest, and (3) symptomatic drug treatment had been given efficient trial. No time limit should be put to this; while there

was definite improvement which could be shown on a chart this treatment should be persevered with, but when improvement ceased, or if no improvement occurred, other measures must be considered without delay. The other measures were X ray treatment and operation. His personal experience of X ray treatment was unsatisfactory. The patients felt better while they were under treatment, but the pulse-rate had not come down, the size of the gland had not been reduced, the exophthalmos had not been altered, nor had the tremors disappeared. There was one theoretical objection against X rays. Dr. Murray stated that pathological examination of glandular tissue after X ray treatment had shown well-marked fibrosis in the gland, as well as fibrosis surrounding the alveoli and around the gland. This fibrosis continued long after the application of X rays, and might be more likely to induce myxœdema through cell-atrophy than clean removal of excess of gland tissue. He had seen many advanced cases whom he had been compelled to operate upon subsequently to X ray treatment.

What was the outlook if patients were not improving? It was said that the course of the disease ended in (1) recovery, (2) myxœdema, (3) death; but there were numbers of patients in various grades of ill-health down to the most complete bedridden wrecks. Some could do light work, some could keep going if they rested much and limited their activities. Some were very ill, but unable to rest, for a spirit of restlessness possessed them, and some were waterlogged from cardiac and renal incompetence. In some an eye was irretrievably damaged. These conditions were far more common than myxœdema, and they were not passing phases. In each of these grades there were those in whom improvement, if it occurred, took years, and those who would never improve. Long periods of most of these patients' lives had been spent in striving to get on to a higher plane of health while gradually slipping down on to a lower. He would venture to state that there were none of these cases which might not be very much improved by operation. Cases were then described and photographs were shown illustrating the improvement after operation. The patients were extremely ill and getting worse. The downward course was stopped at once when a lobe was removed, and the improvement was completed by removing the optimum amount of gland tissue. Exophthalmos would generally disappear if cases were sent for operation within a reasonable time and if sufficient gland tissue was removed. If they were kept until spasm in Müller's muscle had become a contracture, proptosis would be kept up for two reasons, first, because the muscle itself pushed the eye forwards, and secondly, because the œdema induced in the orbital cellular tissues by the contractured muscle caused further proptosis. It was not the fault of the surgeon, but of the delay in the case coming for operation which was the cause of the permanence of the exophthalmos. This symptom took longer than the others to disappear. If there had been great proptosis which disappeared, there remained a bagginess of the lids, particularly the lower one, which was very obvious. He showed photographs of patients in whom there was marked proptosis. In two an eye was lost, and in the other, while the eyes ultimately were saved, haziness of the cornea occurred. In one case in which the eye was lost the exophthalmos in the other disappeared entirely after the operation. He had operated upon many whose hearts were irregular, and upon some who suffered from proved auricular fibrillation. Not all of these had lost the fibrillation; it was a question of the length of time or the extent of the damage. He showed the electro-cardiographic tracings of the heart of a patient before and subsequent to the operation, when it showed no trace of fibrillation. The patient was now doing heavy housework.

Grade of Improvement Obtainable by Operation.

With regard to the degree of improvement which might be attained in the ordinary but severe case which was resistant to medical treatment, our criteria were the pulse-rate, the exophthalmos, the tremor, the menstrual condition, the muscular weakness, and the mental agitation. He would presently be able to use an instrument—the respiratory valve spirometer—for measuring the basal metabolic rate which would give a more accurate measurement of the degree of the disease and its amount of improvement. So far sufficient evidence had not been accumulated to record. Without using the word "cure" one might state that all these cases could be placed on an industrial level, a level where they were able to carry on their household duties, earn their living, bear children, dance, and swim. This result was not always or often going to be obtained by removing one lobe and the isthmus, or by combining this with ligature of the superior artery of the opposite side. Kocher had stated that partial excision of the second lobe was only exceptionally necessary, and that it was an unsafe procedure on account of danger from hæmorrhage. He could not regard either statement as true. Many cases would not be cured without removal of a portion of the second lobe—none of the bad cases were sufficiently improved unless this was done. As regarded its safety, he had never yet lost a patient at a second operation on a case of exophthalmic goitre. This aspect of the subject demanded close scrutiny, for it was the crux of the whole matter. Physicians were dissatisfied with the degree of improvement which operation gave. Many surgeons stated that they removed one lobe, the isthmus, and perhaps ligatured an artery on the opposite side, leaving a lobe may be twice or several times as large as the normal thyroid gland, and a cure was expected. This could not be so. He knew that there were some cases in which removal of one lobe might turn the scale and allow a patient to regain an equilibrium, particularly in early cases or in cases which were very nearly winning their own battle. But this was not the kind of case which was usually sent to the surgeon. It was "unsurgical," if one might use the term, to remove sufficient at one operation. There were some cases in which one's judgment or one's instinct indicated that it should be done, but there were some in which removal of a lesser amount would improve the patient sufficiently. We had no right to remove from an individual more than was necessary to achieve the purpose, but we must remove enough. It was very important, in his opinion, to leave the blood-supply of the portion of gland which was left intact; the gland tissue would never atrophy and it would be more permanently efficient than gland in which fibrosis and cell-atrophy had been induced by X rays.

The next thing to be considered was what made for safety of operation. He knew that the death-rate was extremely low in cases operated upon at any reasonable period during the course of the disease. It rose as one was prepared to undertake grave surgical risks in order to try and save lives in cases which came far too late to the surgeon. A thyroid operation in Graves's disease differed in many respects from, say, a stomach operation, in which the chief consideration for the patient was that the work should be carefully and accurately done, and where it was not of great importance to the patient whether it took 20 minutes or 1½ hours so long as there was careful handling. An operation had never been done by him without fear and great anxiety, even in cases which seemed simple. The fear and anxiety began as soon as one knew that the operation was inevitable, and it did not cease until after the operation had been done. He would plead for earlier operation. It would be safer, it would free the patient, physician, and surgeon from anxiety, the operations would be less extensive, the tragedies, whether of death or ill-health, would be prevented, and patients would be restored to a degree of health unattainable when operation has been postponed too long.

Natural History of the Disease without Operation.

Sir WILLIAM HALE-WHITE said that before we could decide upon the proper treatment of any disease it was necessary to know the life-history of those afflicted with it. In the *Quarterly Journal of Medicine* (vol. iv., No. 13) he published the results of an inquiry into the after-history of every patient suffering from exophthalmic goitre who had been in Guy's Hospital from 1888 to 1907 and of every private patient he himself had seen. After deducting cases operated on and those which could not be traced, 102 remained for consideration. Contrasting their after-history with the expectancy of life of healthy females of the same period of life it appeared that the mortality of sufferers from exophthalmic goitre was about twice as great as it should be. This, however, gave too serious a view of the mortality, for in the first place sufferers from exophthalmic goitre were of such an age that but few healthy persons of the same age died and therefore a double mortality was not a great mortality; in the second place, his cases were all either ill enough to come into hospital or seek a second opinion. The conclusion seemed justified that persons with exophthalmic goitre had not an expected mortality much higher than normal. This was borne out by the fact that the disease was unusual in the post-mortem room. But it was rarely seen in elderly persons, therefore it must be a disease the natural tendency of which was to get well. His figures bore this out, for among the hospital-traced cases 65 per cent. got quite well, 30 per cent. were much better, and 5 per cent. were better in some respects. Among the private-traced cases 74·5 per cent. get quite well, 19·1 per cent. were much better, and 6·4 per cent.

were better. The most interesting causes of death were enteritis and diabetes. It was impossible to allude in detail to all the cases, but to show how well some of them did the following were mentioned:—

Female, aged 21: a severe case in all respects; had glycosuria. Fourteen years later was normal; no glycosuria. Female, aged 23; a very severe case. Seven and a half years later was quite well. Female, aged 29; very severe case; got practically well. Female, aged 20; severe case. Wrote 20 years later to say that she works hard and has done so for 18 years, was married, had three children, and is now a widow. Female, aged 23; medium case. Wrote to say that she was married, had six children, and had not required any treatment for 11 years.

Nowadays the difficult question that always presented itself was whether or not we should advise an operation. With the present state of our knowledge we had not sufficient evidence to answer this question. In order to do so we required the after-history, for a period of 20 years, of at least 100 cases submitted to operation. Then we could learn whether their expectancy of life was better than those not operated upon, and whether they got well sooner, for not all the cases operated upon got quite well; some were only considerably improved. We should also learn whether, having had half their gland removed, they were more liable to myxœdema, and how often they relapsed. There was also the difficulty that the slight cases hardly needed operation, and the danger of it was considerable in the very bad cases. Most of those who were especially interested in the subject could recall deaths either during or immediately after operation, and we must give the patient the opportunity of deciding whether she was willing to run this risk for the cure of a disease the natural tendency of which was to get well. Probably, however, with increasing surgical skill the risk was diminishing. The following case illustrated that an operation might be advised unnecessarily.

A woman was admitted to a surgical ward for operation for exophthalmic goitre. After she had been in a few days, and before the operation, signs of typical typhoid fever showed themselves. She was transferred to a medical ward, and under the rest in bed necessitated by the fever she got completely well of her exophthalmic goitre.

He (the speaker) was not arguing against operation, but was only urging that to bring forward a few cases shown some months after operation was not proof that surgical treatment was best, for it was as easy to show cases which had done just as well without operation. It was notorious that patients with acute peritonitis, empyema, and many other conditions did very badly if operation were not undertaken, but we knew that exophthalmic goitre was a disease the natural tendency of which was to get well, and therefore at least a hundred patients who had been operated on would have to be followed for about 20 years before we should have sufficient data from which to draw a conclusion.

Cardiac Complications.

Dr. J. STRICKLAND GOODALL said that whether patients were treated from a medical or surgical standpoint the condition of the heart was of greatest importance. Working in collaboration with Mr. Berry, he had been carrying out investigations of the heart disorder in Graves's disease, and had made many hundreds of observations. The basal metabolic rates as tested by Benedict's machine would probably prove very useful. He had recently used a modified form of the machine by which graphic records could be obtained. He had come to the conclusion that a patient suffering from Graves's disease probably died from ventricular fibrillation, in the production of which two factors were concerned—pre-existing myocardial degeneration and high blood pressure. The dangerous case was that in which there was definite myocardial degeneration, and in which the blood pressure was high. There had been differences of opinion as to the usual blood pressure in exophthalmic goitre. He thought that it was tri-phasic, the first phase being a transient rise, the second a fall, and the third a rise again.

The discussion will be resumed on Friday, Feb. 25th, at 8.30 P.M.

SECTION OF SURGERY: SUBSECTION OF ORTHOPÆDICS.

EXHIBITION OF CLINICAL CASES.

A MEETING of this section of the Royal Society of Medicine was held on Feb. 1st, Mr. E. LAMING EVANS, the President, being in the chair. Among the cases exhibited were the following.

Mr. B. WHITCHURCH HOWELL showed a case of

Dislocation of the Hip and Other Deformities.

The patient was a girl, aged 7½ years, who had never walked properly. At the age of 2 years she had had pneumonia, followed by diphtheria, after which she began to walk, and the mother stated that it was only then that she noticed that the child waddled and that the feet were deformed. There were no deformities in the family. The patient was fairly intelligent. The right lower limb was one inch shorter than the left. There was talipes equino-valgus, the knee was contracted, the hip was dislocated, and there was coxa valga. The left lower limb showed talipes calcaneo-valgus, slight wasting of the leg, paresis of the tibialis anticus, and contraction of the knee. In the spine there was a dorsi-lumbar scoliosis to the right. Walking was very difficult, the gait was stiff, but not spastic; sensation was unaffected; the left leg was distinctly colder than the right. In the hands the little fingers were radially deformed.

Mr. Howell asked for opinions as to diagnosis, treatment, and prognosis. He thought that the talipes was secondary to the pneumonia and diphtheria, and that the deformity of the hip was congenital.

The PRESIDENT and Mr. R. C. ELMSLIE discussed the case, and thought that all the deformities were congenital.

A Case for Diagnosis.

Mr. M. FITZMAURICE KELLY showed a case for diagnosis. It was that of a man, aged 54 years, who was injured in 1902 by a fall from a horse. There had been a fracture of the left patella, which was still ununited, and the right knee was injured. The joint was opened and drained four days later. He was in hospital for four months, and was well enough to ride again 12 months after the accident. During the war he served in the Royal Engineers, and was struck on the knee in April, 1919, while in Palestine. He remained on duty for a week, then went into hospital, and had been under treatment ever since. When seen early in January, 1921, there was great swelling of the right knee, which contained fluid, and surrounding the joint were several firm elastic masses, which did not communicate with it. The largest of these was in the region of the bursa in connexion with the insertion of the sartorius, gracilis, and semitendinosus. Movement was free and painless, but there was some aching of the joint after prolonged use. A skiagram showed the presence of opaque masses in the region of the swellings and of the supra-patellar pouch of synovial membrane; there was no bony change. The pupils were unequal and irregular but reacted normally; the knee-jerks were unobtainable owing to the condition of the knees. The Wassermann reaction was negative and there was no history of syphilis.—Mr. A. N. SHEEN thought that the condition might be tuberculous.—Mr. H. A. T. FAIRBANK suggested new growth. He thought that it was not tuberculous or syphilitic.—Mr. P. B. ROTH considered the possibility of Baker's cyst.—Mr. BLUNDELL BANKHART did not think that it was new growth. There was probably joint fluid in the most accessible swellings. He had seen gummata about a joint, but they had not felt like these swellings. He thought that it was a chronic inflammatory condition probably dating from the injury.—Mr. R. C. ELMSLIE was opposed to the theory of a chronic inflammatory condition of the synovial membrane, but thought it might be a slow-growing fibroma with cystic degeneration of the synovial membrane; it might possibly be a lipoma.

Mr. KELLY, in reply, said that he thought it unlikely to be new growth, as the swellings were multiple and separated from each other, and on account of the amount of fluid present. (Since the case was shown operation has been performed. The swelling over the inner tuberosity of the tibia consisted of a multilocular mass containing a little fluid resembling synovia, but

chiefly a semi-solid mass resembling altered blood clot. A portion of this is being examined, and a further report will be communicated at a later meeting of the section.)

Mr. ASLETT BALDWIN showed a case of

Still's Disease

in a girl, aged 13, who had suffered from the disease since the age of 5 years. Both hip-joints were flexed, there were flexion and adduction of both knees, ankylosis of the left elbow, both ankles and spine. X ray examination showed considerable rarefaction of the bones of the knee-joints.

The PRESIDENT spoke of a case of Still's Disease, in which he had excised an elbow and both knées which were all ankylosed, but in this case the patient had flexible hips.—Mr. H. A. T. FAIRBANK, in discussing the treatment, said that he would employ slow methods to reduce deformity rather than active methods. The main point was to know when the disease was at an end, and this was extremely difficult owing to the fact that exacerbations usually occurred. It was very important that all active measures should be deferred until the disease was over.

Reactions and Electrical Treatment of the Intrinsic Muscles of the Foot.

Dr. MURRAY LEVICK read a paper on the rôles of some of the intrinsic muscles of the foot, and their importance in maintaining the longitudinal and transverse arches. This was followed by a demonstration of his method of treating these muscles electrically, the various groups being singled out and made to contract in response to faradic stimulation, so as to show clearly the accuracy of what he had said, and the efficacy of the treatment in certain affections of the foot. He said that the treatment was applicable to the preliminary stages of flat foot, and to the after-treatment of those more advanced cases which had been wrenched and fixed in plaster or undergone surgical operation. The rôle played by the flexors of the toes (especially flexor brevis hallucis and flexor brevis digitorum) in supporting the longitudinal arch of the foot was a very important one, because when the weight of the body was thrown forward on to the toes with the heel off the ground the action of both long and short flexors was to draw the heel towards the toes, acting as a bow-string across the arch from heel to toe. For this reason the way to land from a jump was to have the whole weight of the body borne between the balls of the feet and ends of the toes. Also when patients were given heel-raising exercises from the standing position this distribution of the weight should be carefully taught by telling them to grasp the floor with the toes, which thus became the fixed points from which their flexors acted. Flexor brevis digitorum, being inserted into the middle phalanges, was at a mechanical disadvantage in bending the toes when compared with flexor longus, and therefore acted more strongly as an arch-raiser. The flexors of the toes should be used to assist progression in walking quickly or running, those of the great toe being of special importance. If the above points were borne in mind, the efficacy of the treatment demonstrated would be clear. Graduated contraction of any of the intrinsic muscles could be obtained at will. As this treatment was carried out and the active electrode was placed in position to stimulate the desired group of muscles a clear view was gained of the action of the dorsal interossei in raising the transverse arch of the foot. It was seen that this was a strong action, and it emphasised the importance of these muscles. As the core of the coil was introduced and withdrawn, the transverse arch was seen to rise and fall in time with the rise and fall of the current, and a clear mental picture could be formed of the dorsal interossei with their bipennate origins drawing the metatarsal bones together. To describe the action of one of these muscles would suffice to explain the action of the rest, and for purposes of demonstration the second metatarsal bone was considered as the keystone and as the middle line. When the second dorsal interosseous muscle contracted it performed the following rôles in the order given. These rôles had been carefully observed during electrical stimulation of individual muscles, and then of the group as a whole.

(1) Feeble contraction. Abduction of first phalanx from middle line.

(2) Stronger contraction. Flexion of metatarsal-phalangeal joint, plus the pull on the extensor tendon. End of toe brought into contact with the ground (in voluntary movement this contact was, of course, strengthened by the flexors).

(3) Powerful contraction. The fixed points from which the muscle acted were now (*a*) the second metatarsal bone, (*b*) the insertion of the tendon into the first phalanx. As the muscle contracted the third metatarsal bone was drawn towards the second—i.e., towards the middle line. In voluntary movement the second metatarsal was fixed by the opposition of the first dorsal interosseous muscle, which also fixed the first phalanx of the second toe, and so on.

As each metatarsal bone was drawn towards the second metatarsal it was pulled into a plane below that of its more mesial neighbour. It would be seen that the arch-raising action of the dorsal interossei is very powerful and that these muscles must be regarded as of great importance. Still more strongly was the impression given of the action of the short flexors of the toes in raising the longitudinal arch, while the toes, acting as fixed points, pressed the bottom of the bath. The marked action of abductor hallucis showed how it can still be trained to assist in maintaining an improved position of the great toe when this has been corrected by mechanical means. Tibialis posticus and the long toe flexors were stimulated individually, and were seen each to raise the longitudinal arch in turn. He said that the method of treatment he had shown was strongly to be recommended as a preliminary to voluntary exercise. It was waste of time and discouraging to the patient to begin re-education before the intrinsic muscles of the foot were in at least a fair state of nutrition. He regarded it as inseparable from the satisfactory treatment of flat-foot after seeing the surprisingly good results that it yielded. Often it is difficult or impossible to re-develop the small muscles by voluntary exercise alone; this applied especially to those cases which had been re-postured by surgical means, so that they were suddenly relaxed after a long period of overstretching with its accompanying atony.

SECTION OF LARYNGOLOGY.

A MEETING of this section of the Royal Society of Medicine was held on Feb. 4th under the presidency of Dr. W. JOBSON HORNE.

Tumours of the Ventricle and of the Ventricular Band of the Larynx.

The PRESIDENT, à propos of a case of supposed prolapse of the ventricle of the larynx shown by Dr. Frederick Spicer at the last preceding meeting of the section, gave an instructive epidiascopic demonstration on some cases of tumours of these parts which he had collected over a long experience of post-mortem examinations, with the object of contributing to the discussion as to whether prolapse of the lining of the ventricle ever occurred. He did not enter into the question of malignant tumours. In the first of the specimens the ventricle was occupied by a dependent growth. On cutting the larynx through, the growth was found to occupy almost the entire length of the ventricle. That tumour might eventually appear at the mouth of the ventricle and suggest prolapse, in spite of its being merely a supernumerary ventricular band. The second specimen (which was exhibited in spirit) was one of genuine prolapse of the lining membrane. There was necrosis of cartilage at the site of an old gumma, the epiglottis and aryepiglottic fold were considerably swollen, setting up real œdema of the larynx. The ventricle was occupied by the prolapsed membrane, and the prolapse came about through the cartilage necrosing. The lining membrane had become detached and had dropped out, and could be seen lying over the cord. The man was so desperately ill that he died practically on arrival at the hospital, before tracheotomy could relieve him. Other sections were shown in the series.

Dr. F. SPICER reported that when a portion was removed from his case the inflation collapsed entirely.—Dr. W. HILL showed a sketch of Dr. Spicer's case as it was seen by him. The sacculus laryngis perforated the false ligament and pushed the membrane of the ventricular band in front of it. When it collapsed it lay on the anterior part of the ventricular band. He regarded the case as one of sacculus laryngis.

Eversion of Sacculus Laryngis.

Dr. IRWIN MOORE demonstrated, by means of the epidiascope, two authenticated specimens of eversion of the sacculus laryngis, pointing out the need for discriminating between eversion of the sacculus laryngis and eversion of the ventricle. He contended that there was no such condition as prolapse of the ventricle, but it could be simulated by a tumour behind the ventricle pushing it forward.

Sir JAMES DUNDAS-GRANT considered that the appearance presented by Dr. Spicer's case when he examined it could only have been produced—with such a history—by a lesion beneath the vocal cord, at a spot where trauma had occurred, and air had been forced through this and through the submucous tissue of the vocal cord and the ventricular band. He gave his reasons for the belief. With regard to prolapse of the larynx, he agreed that every patient with that condition was tuberculous. He believed prolapse of the saccule of the ventricle could exist.—Sir STCLAIR THOMSON repeated his disbelief in the existence of prolapse of the ventricle of the larynx. Sir Morel Mackenzie, in his vast experience, evidently had not seen a case of it. Kocher cut sections in 19 cases of the supposed condition in Vienna, but did not find real prolapse in any.—The PRESIDENT said it was generally agreed that in speaking of the ventricle the sacculus was included. The eversion Dr. Irwin Moore spoke of did occur.

Tongue Adhesions.

Mr. NORMAN PATTERSON showed a bookbinder, aged 22, who five years ago had difficulty in swallowing and received treatment for "swollen larynx." It was not painful. A year ago he had treatment for lupus of the skin of the nose; he also had naso-pharyngeal obstruction. Adenoids and tonsils were removed at 6 years of age, and since 9 years he had had skin lupus following trauma. He now had dyspnœa on exertion. Numerous bands of scar tissue could be seen in the oropharynx, extending to the base of the tongue in the region of the lingual tonsils. Wassermann reaction was negative.

Mr. G. W. DAWSON referred to two young cases of adherent palate. The complaint was of deafness and the discomfort of retained secretions in the nose. They were found to have congenital syphilis. Operations failed to maintain an opening, and recourse was had to an artificial palate, which was a success.—Sir WILLIAM MILLIGAN suggested that the present case might be one which sprang from unrecognised diphtheria, and the lupus might also have had an influence on it. Treatment of these cases he had found to be very unsatisfactory.

Fatal Tonsillectomy.

Dr. MCLEOD reported the cases of patients aged 10 and 6 years, girls, who died shortly after removal of their tonsils. For each the anæsthetic was C_1E_2. The first patient was quite well at 2.30, but two hours later was vomiting bright blood, and also one and a half hours later still. There was a blood clot in the naso-pharynx, but none in the tonsillar fossæ. Various procedures, including stitching of the faucial pillars, left the child improving and without bleeding, and at 10 P.M. she was talking. At 3 A.M., however, death suddenly occurred. In the second case the operation was done at a school clinic at 10.30 A.M. At 12.30 Dr. McLeod was called to the case on account of hæmorrhage and vomiting. As it had not ceased at 1 o'clock the anæsthetic was again given and the left fossa stitched and the naso-pharynx plugged. There was a clot in the left fossa. Consciousness did not return, and the end came at 5 P.M. The plug was firm in the naso-pharynx and there was no bleeding. Prolonged artificial respiration, injection of ether and strychnine, and heart massage failed to restore animation. Dr. McLeod sought information on the probable cause of death in these cases.

In the discussion on the cases attention was directed to the amount of blood which might enter the stomach from mere oozing without any bleeding vessel being specially identified. A case was mentioned in which a tuberculous gland had ulcerated into the carotid artery, and if that child had been put on the table for removal of adenoids the operation would have been blamed for a fatal result. Importance was also laid on the surgeon assuring himself that the bleeding had ceased before the patient was taken off the table. Acute acidosis was suggested as a possible cause of death. One speaker referred to only 5 deaths in 14,700 cases of this kind, ethyl chloride having been the anæsthetic. All the speakers commended Dr. McLeod on his courage in reporting the cases and seeking help for future guidance.

Osteomyelitis After Intranasal Operation.

Dr. DAN MCKENZIE showed a man, aged 29, on whom an intranasal operation on the frontal and maxillary sinuses was performed 12 months ago. A fortnight later an abscess formed at the inner angle of the corresponding orbit, and was opened by an external incision. The disease spread to parts of the face bones, and was checked by free removal of the infected bone areas. During the illness an autogenous vaccine was tried, but was discontinued, as it was causing severe focal reaction. The intravenous use of argentum colloid, however, produced great benefit. Convalescence was checked by acute rheumatism. The residual facial deformity is but slight.

Mr. W. M. MOLLISON offered his congratulations on the case, and spoke of the obstinate character of the condition in many instances.

Large Growth of Nasal Septum.

Mr. HERBERT TILLEY showed a woman aged 42, who had had a swelling on the right side of the nose eight months. An operation was done eight months ago, and was followed by a rapid recurrence of the growth and bleeding from the nose. Two months ago a large fungating mass projected from the right nostril. At the operation on that date the growth was seen to be attached to the septal cartilage by a pedicle one-sixth inch in diameter, and the swelling extended upwards and backwards to the ethmoidal region. Sarcoma seemed the most likely diagnosis.

Webbing of the Larynx.

The PRESIDENT showed a case of web in the larynx, the like of which neither the exhibitor nor any of the members present had ever seen.

Dr. A. LOGAN TURNER showed water-colour sketches of a number of diseased conditions, with notes of the cases portrayed.

Other cases were shown for diagnosis and were discussed.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

AT a meeting held on Feb. 3rd Dr. W. LANGDON BROWN read a paper on

Types of Glycosuria and their Treatment.

He said that although carbohydrate forms more than 70 per cent. of the ordinary diet it only constitutes about 1 per cent. of the body-weight. This simple consideration showed that it is the most easily metabolised of the foodstuffs, so that disturbed metabolism is apt to show itself particularly in respect of carbohydrate. That true diabetes implied a great deal more than a mere disturbance of carbohydrate metabolism was now recognised; it was a disease characterised by exaggerated katabolism, which shows itself first and most obviously in respect of carbohydrates. Dr. Langdon Brown discussed the various ways in which the body normally dealt with carbohydrates, and pointed out that it attempted to compensate for an impaired power to assimilate them (1) by storing more than usual as fat in the earlier stages of metabolism; (2) by

raising the "leak-point" for sugar, thus diminishing its escape. He said that in some persons the leak-point is abnormally low, constituting renal glycosuria, which can usually be recognised by the constant output of sugar, irrespective of diet. Since the sugar in the blood and in the urine do not run parallel owing to variations in the leak-point, it is important to know what is happening in the former. A single observation is not of much use; it is far more helpful to give a dose of sugar and watch how the body is able to dispose of it by estimating the blood sugar at regular intervals. Adopting this method, Mackenzie Wallis had shown that the blood sugar followed an entirely different curve in different types of the disease. Dr. Langdon Brown demonstrated a number of curves which indicated the help that could be given in prognosis and treatment by this means. Some of these illustrated renal glycosuria, others the response of normal individuals. A series of curves were shown from mild, intermediate, and severe cases, illustrating the gradual approach of the curve to the severe type in which hyperglycæmia might be present even without glycosuria, but in which the administration of sugar was followed by an abnormally steep and sudden rise with a great delay in the fall. An interesting point was that the glycosuria of pregnancy followed the same type of curve as that due to thyroid or pituitary excess, confirming the view that it is due to the stimulating effect of pregnancy on these glands. Dr. Langdon Brown discussed the help which these curves gave in adapting treatment to individual cases, ensuring that these would neither be under-treated nor over-treated. He then considered the influence of alimentary rest, and said that something intermediate between Allen and Graham's plan would in the future probably be found to give the best results. Unfortunately, alimentary rest could not affect the underlying disturbance of the sympathetic nervous system, which he believed to be present in all severe cases, but could only deal with the result as expressed in the exaggerated katabolism. Therefore, carbohydrate tolerance sometimes continued to fall despite such treatment. Nevertheless, in other cases the damaged mechanism was able to show some degree of recovery through not being overtaxed, and certainly alimentary rest gave a more hopeful outlook in the treatment of diabetes than had existed previously.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

A CLINICAL meeting of this society was held at the West London Hospital on Feb. 4th, Dr. F. J. MCCANN, the President, occupying the chair. The following cases and exhibits were shown:—

Dr. F. S. PALMER: A case of Progressive Muscular Atrophy (Aran-Duchenne type) in a man of 73. The disease was advanced, though symptoms had been present only 14 months. The whole right arm was markedly wasted and flail-like, with vaso-motor changes in the hand. Wasting was most evident about the shoulder. The left arm was affected to a less degree. Fibrillary tremors were present. Sensory changes were absent.—In reply to Dr. J. BRINDLEY-JAMES, Dr. PALMER said he was treating the case by electrical stimulation of the affected muscles and a strychnine tonic, but he did not know of any form of treatment that had any real influence on the course of the disease.

Dr. ARTHUR SAUNDERS: A case of Facial and Lingual Hemiatrophy of Congenital Origin, in a girl. The auricle was malformed, though hearing was normal. X rays showed defective development of the cranial bones on the affected side.—Dr. PALMER remarked that alopecia was usually present in these cases on the affected side and was absent in this case.

Mr. ASLETT BALDWIN: (1) A case of Rodent Ulcer of Nose and Cheek treated by excision and plastic operation.—Mr. BISHOP HARMAN cited cases of similar ulcers which had invaded the orbit necessitating exenteration of the orbit, and pleaded for early excision of ulcers of this type. (2) A case of Syphilitic Aneurysm of the Subclavian and Axillary and perhaps also the Innominate Arteries, noticed first two months ago. Pain was entirely absent. (3) A case with Swelling of Uncertain Origin over the Scaphoid Bone of the Foot of three years' duration. An X ray plate of the foot was shown.—Mr. O. L. ADDISON expressed the opinion that the condition was certainly of inflammatory origin as shown by the skiagram. (4) A case of Multiple Enchondromata of the fingers after operation. X ray plates were shown to illustrate the condition of the parts.

Mr. BISHOP HARMAN: A new Direct Record Scotometer which he had recently designed.

Mr. B. SANGSTER SIMMONDS: (1) A case of gunshot wound of the brachial plexus (complete lesion) treated by secondary suture. Operation was undertaken eight months after the injury. Sixteen months later there was some voluntary contraction in deltoid and biceps, with regenerating sensation. At present the deltoid, biceps, triceps, supinator longus, and extensores carpi radialis longior and brevior contracted voluntarily. (2) A case of Right Hemiplegia with Cortical Hemianæsthesia and Aphasia following gunshot wound of left parietal region. Patient was unconscious for three months. At present (30 months after injury) there was diminished but not complete loss of tactile, pain, and thermal sensations on the right side, while stereognosis and position sense were completely lost. Localisation was poor on this side. The hemiplegia and aphasia were recovering. (3) A case of Complete Lesion of Median and Ulnar Nerves of gunshot origin. A graft had been done from the internal cutaneous to the ulnar without success. The median nerve had been sutured a year ago. Mr. Simmonds said he proposed excising the ulnar graft and suturing the ends directly and bringing the nerve in front of the condyle. (4) Two cases of Gunshot Lesions of the Musculo-spiral Nerve. In one a 4-inch gap had rendered end-to-end suture impossible. Mr. Simmonds had 20 months ago performed tendon transplantation at the wrist. The man had now a useful hand with which he could earn his living as a clerk.—Mr. BALDWIN wished to congratulate Mr. Simmonds on the excellent series of cases he had shown, and drew attention particularly to the last case in which a crippled limb had been restored to practically normal function.

Dr. D. G. RICE-OXLEY: A case of Advanced Osteo-arthritis in a woman. There was no obvious source of infection, and all the usual remedies had proved ineffective. He had recently treated her with rheumatic phylacogen.—Dr. VAUGHAN PENDRED cited a case in which he had found phylacogen of great benefit.—Dr. A. LAPTHORN SMITH asked if any members had experience of colloid sulphur.—Dr. RICE-OXLEY said sulphur had not been used in his case.

Dr. J. BURNFORD: (1) A case of Complete Lesion of the Fifth Cranial Nerve of Tertiary Syphilitic Origin in a woman of 63. The condition was improving under specific treatment. (2) A case of Aneurysm of the Aortic Arch and Innominate Arteries. "Tracheal tugging" and "chin-jerking" were present. No laryngeal paralysis was present. (3) A well-marked case of Acromegaly in a woman. Symptoms had been present nine months.—Dr. LAPTHORN SMITH referred to the importance of "tracheal tugging" as a sign of aortic aneurysm.—Dr. RICKARD LLOYD drew attention to the inequality of the pupils in the case of acromegaly.

Mr. TYRRELL GRAY: (1) A case of Median Hare-lip, with marked lobulation of the tongue and a cleft of the soft palate of irregular form. (2) A case of Dupuytren's Contracture of Both Thumbs in a woman of 72, by occupation a cook. The condition was most marked in the right thumb. (3) A Sebaceous Horn of the Abdominal Wall which had recurred after removal of horn alone.

Dr. REGINALD MORTON showed an X ray of the chest of a diamond-miner suffering from silicosis. He pointed out the difference in the X ray appearances between this condition and pulmonary tuberculosis.—Dr. SAUNDERS referred to the frequency of tuberculosis in the subjects affected by silicosis.

Dr. S. D. CLIPPINGDALE showed a Walking-stick, said to be 200 years old and now in possession of the Fagge family. It was of the type used by medical men of that period, and in its hollow handle and shaft were contained a phial and measuring-glass.

MANCHESTER ROYAL INFIRMARY.—**The annual** report of the Manchester Royal Infirmary states that the total number of persons treated in all departments was 57,210—11,550 in-patients, 44,071 out-patients, and accident cases. The expenditure has increased to such an extent that but for a large donation from the National Relief Fund, which will not recur, and the disposal of £30,000 invested funds, the expenditure would have exceeded the income by £40,000. In order to induce the right type of women to take up the occupation of nursing, better salaries must be given and hours shortened. An additional income of £12,000 a year will be required for the maintenance alone of the staff in the nurses' home, which is to be erected near the infirmary at an estimated cost of £96,000. It is anticipated that during the next three years a total deficit of £200,000, involving the exhaustion of all funded capital, will have to be faced.

Reviews and Notices of Books.

TRAITÉ PRATIQUE DE SEROLOGIE ET DE SÉRO-DIAGNOSTIC.

By MARC RUBINSTEIN. Paris: A. Maloine et Fils. 1921. Pp. 414. Fr.22.

THE author of this book disarms criticism at the outset by pointing out how impossible it is nowadays to keep abreast of research work in serology. Every laboratory worker who has made the attempt will heartily agree with him. One of the difficulties appears to be the interchange of foreign journals. We have reviewed more than one foreign book recently in which British and American work has been scantily considered, and doubtless there are English publications of which a foreigner might make a similar criticism.

The book before us is largely the outcome of an inquiry made by the author into the serology of syphilis, on behalf of the French Government. Consequently, the portion which deals with this subject is the most extensive; in fact, the discussion of the practical laboratory side of the serology of syphilis and cognate matters accounts approximately for one-third of the book. Dr. Rubinstein has evidently approached this side of the work with great enthusiasm, and has made investigations on collateral subjects, such as standardisation of complement, the variations in normal complement, and the "index de la sensibilisatrice." With considerable care he has also studied in detail most of the methods used for the Wassermann reaction, together with the well-known modifications which have been introduced from time to time.

The first part of the book discusses general questions, such as the examination and standardisation of antigens, the action of antibodies, and physico-chemical problems related to them. All these points are dealt with in a practical straightforward manner. There is little theory, and the more academic side of immunity, such as anaphylaxis, is only mentioned in so far as it relates to serum diagnosis. The last part of the work treats of serum diagnosis as applied to enteric, cholera, gonorrhœa, plague, tuberculosis; and closes with special chapters on the serum diagnosis of carcinoma and the Abderhalden reaction. With the treatment of these subjects the author has not, in our opinion, been so successful. There is no reference to the work of the American serologists on the pneumococcus, or to similar work on the meningococcus by A. Flexner and H. M. Gordon, and the workers of the Medical Research Council; again, there is very little reference to work on tuberculosis published since 1914, especially American work on complement-fixation. No doubt much of this was unavoidable owing to the difficulties of the war, but in some cases well-established pre-war work is omitted. In conclusion, therefore, we cannot help feeling that the author would have been well advised to confine his book to the serology of syphilis, of which he has evidently made a thoroughly able study, rather than to include other diseases in which he has not been able to bring his subject matter up to date. Dr. Rubinstein is to be congratulated on the excellence of his reference work as far as French and German authorities are concerned. This will be most helpful to English readers, but we cannot help regretting again that he has not included more references to good and reliable British and American research work on serum diagnosis.

MEDICAL ELECTRICITY.

By the late Dr. LEWIS JONES. Eighth edition. Revised and edited by L. W. BATHURST, M.D. London: H. K. Lewis and Co., Ltd. 1920. Pp. xvi. + 575. 22*s*. 6*d*.

THE present edition differs from those which have preceded it by the omission of the chapter on the Rontgen rays, and the addition of a new chapter on ultra-violet radiation. The subject of radiology has become so large that it cannot be adequately treated in a book devoted to electrotherapeutics. The effects of X rays are, however, described, and in the chapters dealing with treatment references are frequently made to their use for various diseases. In the chapter on ultra-violet radiation the experience of many recent workers in the use of the tungsten arc lamp is incorporated. Among other additions is an account of some work by Adrian on the measurement of the current that will cause contraction of normal and paralysed muscle when the duration of its flow is varied, the results being plotted in the form of curves. The editor is apparently not tempted to discuss the significance of these curves or to speculate on the part which the measurement of the chronaxie may play in the testing of the reactions of muscle and nerve.

Students of electrotherapy who are not familiar with the work of the late Dr. Lewis Jones would do well to read this book, as it contains the experience of one who was not only master of his subject but was a sound and safe teacher of a branch of therapeutics in which exaggerated claims and fantastic theories are too often presented, and are likely to mislead the beginner. The editor has done good service by his survey of recent literature and the addition to the book of the experiences of other English and foreign writers. Readers are thus acquainted with the work which has been done during the past two years on electrotherapy and electro-diagnosis. The treatment of the genital tract in the female might with advantage have been more fully considered. The present edition contains a more complete index than did its predecessors.

GENERAL PRACTICE AND X RAYS.

A Handbook for the General Practitioner and Student. By ALICE VANCE KNOX, M.B., B.Ch. With Chapters on the Production of X Rays and Instrumentation, by ROBERT KNOX, M.D., C.M., M.R.C.S., L.R.C.P. London: A. and C. Black, Ltd. 1921. With 32 page plates and 56 diagrams. Pp. 214. 16*s*.

IN spite of a declaration in the introduction that this handbook is written particularly for those who already realise the value of X rays, the text is chiefly occupied in emphasising in general terms the value of X rays in the diagnosis and treatment of disease. The reader will look in vain for concise information in regard to the preparation of the patient, his examination, or the reading of the radiograms produced. In the preparation of a patient for a barium meal it is advised to give a "good aperient" two nights before, a "mild aperient" the night before, and an enema on the morning of examination, which preliminary treatment would in most cases produce an unphysiological condition of the alimentary tract. The relation of the normal or abnormal stomach to the umbilicus is not given, nor is it mentioned that the patient should be examined standing as well as recumbent. Other matters are dealt with in a manner that suggests a writer who realises the value of radiography, but has little knowledge of its use. There is no reference to radiography of the teeth. The plates are very good and excellently reproduced. Part 2 gives a slight introduction to radiology and description of some of the apparatus in use, but the reader would require a knowledge of physics to gain instruction by reading it.

WHITE AND MARTIN'S GENITO-URINARY SURGERY.

Twelfth edition. By EDWARD MARTIN, BENJAMIN THOMAS, and STIRLING MOORHEAD. London and Philadelphia: J. B. Lippincott Company. 1920. Pp. 928. 35*s*.

IN the preface of this book the authors state that since their last edition the text has been revised and new illustrations been added, together with a special section on the prophylaxis of venereal disease. It is difficult to find any of these changes with the exception of the latter, incorporated in a useful article, although rather short. The book covers the whole of genito-urinary diseases and is essentially practical; the attention paid to differential diagnosis is especially valuable to the practitioner. More information might be given in future editions with regard to the methods and treatment of bladder papillomata by diathermic

cauterisation: this is becoming a universal form of treatment, but is dismissed in a single sentence. The description of the various stages in the treatment of venereal disease is admirably full. The illustrations are, on the whole, excellent, but the reproduction of X ray photographs is still somewhat disappointing, as in the previous edition. The fact that the book has gone into 12 editions is sufficient evidence of its use.

MEDICAL NOTES.

By Sir THOMAS HORDER, M.D. Lond., F.R.C.P. Lond. London: Henry Frowde and Hodder and Stoughton. 1921. Pp. 112. 6s.

IN this little book, written in the form of clipt paragraphs, Sir Thomas Horder gives some of the results of a great experience of clinical and academic medicine. The book claims interest from every student and practitioner of medicine, and the material gives evidence of having been carefully filtered before it was allowed to crystallise into its present form. It is written, necessarily, in disjointed paragraphs, but a single idea runs through it and gives it sequence and uniformity. The "Notes" centre round diagnosis; the first proclaims its paramount importance, but nevertheless due place is found for treatment and prognosis. Diagnosis depends on physical signs, for "one physical sign is of more value than many symptoms," a point worth remembering at the present time, when some would appear to believe that symptoms always develop before signs of disease. Many "Notes" show the minute care taken in eliciting physical signs, while perhaps the most refreshing current running through the text is the critical appreciation of the value of the observed signs and of the limits to the deductions to be drawn from them. There is obvious courage in an author who gives the world a clear insight into his practice of medicine and who lays himself open to criticism by dogmatic statements. That some of the statements, which bear the sure stamp of originality, are the commonplace of current text-books is no criticism of these "Notes," but it is pleasant evidence that text-books themselves are ultimately based on personal experience. Though the "Notes" have no doubt been jotted down at any moment that they took form in the author's mind, yet the subjects dealt with preserve a certain proportion. Common diseases and conditions are recognised as more important than the uncommon; the "tripod of life," the heart, lungs, and brain, claims 72 pages of the total 112, evidence, were it needed, of the well-balanced mind of its author.

IN SEARCH OF THE SOUL.

The Mechanism of Thought, Emotion, and Conduct. A treatise in two volumes. By BERNARD HOLLANDER, M.D. Vol I., The History of Philosophy and Science from Ancient Times to the Present Day. Vol. II., The Origin of the Mental Capacities and Dispositions of Man and their Normal, Abnormal, and Supernormal Manifestations. London: Kegan Paul, Trench, Trübner, and Co., Ltd. Vol. I., pp. 516; Vol. II., pp. 361. £2 2s. complete.

ABOUT one hundred years ago a certain Mr. Robert Montgomery wrote some singularly bad poems, in one of which occurred the couplet, damned for ever by Macaulay:—

> The soul, aspiring, strives its source to mount,
> As streams meander level with their fount.

Montgomery's absurdity must have exercised some influence upon Dr. Hollander's unconscious mind, for just as Montgomery's soul strove for an absolute impossibility (no stream can, or ever could, "meander level with its fount"), so Dr. Hollander comes to this conclusion at the end of his second volume: "It would be audacity on my part to affirm or deny, or even to argue, on the existence of a soul and a life hereafter. Not until investigations are made on the lines described in this work, not until ethology is recognised as well as psychology, not until brain research is extended from motor and sensory to mental manifestations ..... will it be safe to speculate on the soul and spiritual nature of man. Only one suggestion I would venture in conclusion. Every particle of man is alive and adjusted in its function to the whole being, the self, and by his thought and emotion he can control not only his brain activity but every function of the body, accelerating or inhibiting it. From this it appears to me that instead of saying, 'man has a soul' it would be more correct to say that 'man himself is a soul.' He is not a conscious machine, but a spiritual being." However, although Dr. Hollander ends with the same note as Ecclesiastes, his two closely printed volumes contain an enormous amount of information, and the first volume in particular is most useful as a book of reference. We have noticed a slip or two—for instance, he makes no mention of the Minoan civilisation, and on p. 121 the date of John of Gaddesden's notes on travel is given as 1350 instead of 1305, which it probably was, and no one would gather from his notice of Weyer (Wierus) that he was much in advance of his time in writing on the folly and cruelty of trials for witchcraft. Nearly 200 pages of Vol. I. are devoted to an account and examination of Gall's life and work and point out what is generally unknown or overlooked—viz., that Gall was not so much a phrenologist as a great anatomist, physiologist, and psychologist. Vol. II. is mainly concerned with ethology, or the science of character, and the cerebral origin of intellectual operations. Dr. Hollander pleads, and rightly so we consider, for early and individual treatment of mental cases (pp. 241–242). The book as a whole is a useful contribution towards the study of a very obscure subject, though here and there it has its longeurs, and the very close print makes its reading for any length of time somewhat difficult.

PROTHÈSE DENTAIRE.

Third edition. By MAURICE WISNER. Paris: Libraire Le François. With 55 illustrations. 1920. Pp. 224. Fr.12.

THIS book, which, according to the preface, is intended for practitioners and not students, contains information dealing with the rudiments of dental mechanics. Some of the author's ideas are a little out of date—for example, the suggestion that crowns should be fixed with silk and mastic varnish. The author advocates the removal of a plaster impression before it has quite set, a plan which cannot fail to produce defectively fitting dentures. Dental mechanics is too large a subject to be dealt with efficiently in such a small work.

THE SCIENCE OF OURSELVES.

A Sequel to the "Descent of Man." By BAMFYLDE FULLER. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1921. Pp. 326. 16s.

THIS pleasant book, by one who has seen much of the world in different continents, centres round the proposition that, as man's bodily characteristics have evolved from those of the lower animals, so his mind must also have developed in much the same way from a simpler state. Consciousness, and that awaredness of consciousness which is the outstanding property of the human mind, must have evolved from the unconscious, and by a study of the different "planes" on which the nervous system acts the author seeks to show how this may have come about. He never really faces up to the question whether the mind is a product of the brain or whether the brain is, as James would say, a window which lets something in from outside; but it is evident that while he would have preferred the latter conclusion he feels that the evidence compels him to accept the materialistic interpretation. And in this there is some encouragement: man is a disappointing angel but an astonishingly good ape, and if we realise that anger, pride, and jealousy are merely nervous reactions without any particular nobility of origin we are the better able to resist them. The other great problem, whether elementary animals have "minds" and "souls," is not brought under close survey. Like most people who are interested chiefly in human affairs the author roughly assumes that they

have not; if he had been a naturalist with the same shrewd kindly outlook on worms and insects as he has on his fellow-men he would probably have held the opposite view. It is doubtful whether the book can be classed as a great contribution to the understanding of the nervous system or of the mind, but it will do most people good to read it and follow out for themselves some of the many lines of thought which it will suggest. There is an interesting note on Indian "wolf-children," the genuine occurrence of which is regarded as substantially authenticated.

SELECTED MATERIA MEDICA.

By W. C. SILLAR, M.D., B.Sc., and C. G. LAMBIE, M.B., Ch.B. Edinburgh: James Thin. 1920. Pp. 41. 2*s*. 6*d*.

HERE we have a series of interleaved tables whose purpose is to render more simple the memorising of the pharmacological actions, therapeutic uses, and doses of drugs, the material dealt with having been chosen with a view to eliminating "the redundancy of the official list." The following tables are among those included: a list of the English names of drugs arranged pharmacologically, with average metric doses and Latin abbreviations, which, by the way, are not always identical with the official ones; drugs and preparations for oral administration, arranged according to dosage, but subdivided into certain fairly well-defined groups; and various tables of drugs and preparations applied externally or given by injection, inhalation, and so forth, with the strengths of the preparation so employed. About a page is devoted to prescription writing, and some information is given as to the dosage of sera and vaccines. It will be gathered from the foregoing that the volume falls into that class of books which, when judiciously used, are helpful for purposes of revision and rapid reference; but our advice to the student is that he should, if possible, himself compile such synopses, of which he will then realise the limitations, from standard works and lecture notes. He will not fail to acquire much valuable knowledge in the process.

JOURNALS.

Journal of Laryngology and Otology.—The January issue of this journal, formerly the *Journal of Laryngology, Rhinology, and Otology*, contains, under the title Chorditis Fibrinosa, an interesting paper by Dr. A. Brown Kelly. He describes an uncommon variety of acute laryngitis characterised by the deposition of fibrin and the occasional formation of erosions on the vocal cords. All his cases occurred amongst soldiers, and he comments upon the obvious rarity of the affection in civilian life. The irritating effect of gas was the commonest cause assigned for its production.—Dr. Irwin Moore gives the first instalment of a paper upon Angeiomata of the Larynx, a variety of tumour sufficiently rare to merit the labour which he has expended upon collecting all the references to it in literature.—Dr. J. Kerr Love contributes a Critical Review upon Deaf Mutism, a subject upon which he is well entitled to write. He emphasises the important point that it is the duty of the medical man to search for the causes of deafness and to apply this knowledge to its prevention. In the hands of the new management, the general appearance of the journal, as regards paper and type, has been much improved.

Brain. Vol. XLII., Part 4.—Suggestion and Suggestibility, by E. Prideaux. The author defines suggestion as "a mental process resulting in the acceptance with conviction of a proposition in the absence of logically adequate grounds for its acceptance." The chief factor in the process is the suggestibility of the patient. Four forms of this are differentiated: (*a*) Individual, (*b*) conditional, (*c*) specific, (*d*) personal. All come into play in the process of suggestion; they are "affective states evoked by the stimulation of different instinctive tendencies." Depending upon the relationship of the suggested idea to the several forms of suggestibility, three types of response are possible: (1) Positive, (2) negative, (3) neutral. An idea is accepted because it harmonises with some preformed interest, sentiment, or complex; a negative response results when the idea is not in harmony with these—i.e., "negativism" is marked; the response is neutral either when there are no preformed complexes to which the suggestion can attach itself or when there is a conflict of motives with the production of a state of doubt. Hypnosis is to be regarded only as an exaggerated form of suggestion. The aim in treatment is to induce suggestibility in its various forms in the patient; the affective state may be altered by inducing an emotion of surprise or anger. "There is no question that the method of normal suggestion by explanation and appeals to feelings is the best. ..... In the other methods the patient relies entirely on the physician, does not understand his condition, and is much more likely to relapse."—Lethargic Encephalitis; Its Sequelæ and Morbid Anatomy, by E. Farquhar Buzzard and J. G. Greenfield. 20 cases and the pathological findings in five fatal ones are recorded. The symptomatology is much more varied than was at first believed. It is suggested that the characteristic lethargy may be attributed to blockage of the iter by inflammatory œdema of the region of the corpora quadrigemina. There are three main types of case: (1) with hemiplegia, &c.; (2) resembling paralysis agitans, the basal ganglia group; (3) with implication of the cranial nerves. But the lesions are always more widespread than the main symptoms suggest. A striking feature of the more serious cases is the late development of involuntary movements of the limbs, jaw, or tongue. The authors consider that probably "they represent the release of some nervous activity by interference with control." The only treatment advocated is re-education of control, and the prognosis is favourable. Four cases in people over the age of 40 are described, from which the following important lessons are to be learned: (1) that patients over 40 may be the victims of encephalitis, producing hemiplegia, &c.; (2) when there are no obvious gross signs of disease in the cerebral arteries to account for a hæmorrhage it is essential that microscopical investigation should be carried out; (3) the presence of thrombosed cortical veins associated with hæmorrhage in the neighbouring brain substance is strongly indicative of an inflammatory process. The microscopical features are vascular congestion, toxic degeneration of nerve cells and neuronophagy, proliferation of the mesoblastic cells of the vessel walls and infiltration of the nervous tissue by these cells, small-celled infiltration of the Virchow-Robin space, glial proliferation. Venous thrombosis and hæmorrhage are not uncommon; the latter occurs round a congested vessel, usually a vein, or as a result of infarction from an arteriole.—Local Paralysis Following Superficial Injuries not Involving Nerve Trunks, with Special Reference to Traumatic "Ascending Neuritis" and to "Reflex Paralysis," by F. M. R. Walshe. Four cases are described which indicate that in rare instances the clinical manifestations of a local neuritis may follow trivial injuries of the afferent terminations of the nerve affected. The symptoms were progressive, but in only one case was there evidence of continued upward extension. The author considers that the cases approximate to the condition known as "ascending neuritis" rather than to the muscular reflex affection of acute arthritis and allied lesions; he suggests that a small proportion of Babinski's cases of "reflex nervous disorders" may have been of the same nature.

Vol. XLIII., Part 2, 1920.—Aphasia and Kindred Disorders of Speech, by Henry Head. In this, the Linacre lecture for 1920, the author puts forward a fresh conception of the clinical phenomena of loss of speech from the physiological rather than from the anatomical point of view. All previous theories fail to explain clinical facts. In particular, those presuming a localisable "faculty of speech" or the storing of "images" of movement, hearing, and sight give no explanation of the inconstant response to tests which is so characteristic in lesions of the cerebral cortex. The author has elaborated a new method of examination by "serial tests, which alone make it possible to draw any conclusion from the inconstant responses." Owing to the war it has been possible to apply the tests to men who, apart from their head injuries, were in perfect health, a very different type from the usual civilian aphasic. For a description of the tests the reader is referred to the original paper; any summary of them would be misleading, for they depend for their usefulness on the most minute observance of detail. As a result of this research the author is enabled to draw the following conclusions. Disorders in the use of language, due to a unilateral lesion of the brain, cannot be classed under the categories of isolated affections of speaking, reading, or writing. They cannot be explained as due to destruction of images. In cases of so-called "motor" aphasia not only external speech but certain aspects of internal verbalisation are affected. The gravest and most definite disturbance is to be found in the use of words, figures, and other symbols; the functions which are affected in aphasia and kindred disorders of speech may be grouped under the heading of "symbolic thinking and expression." and any act is liable to suffer which requires for its perfect performance the antecedent formulation of the ultimate intention or goal towards which it is directed. The more nearly a symbolic action approximates to a proposition the greater difficulty it will present. Lastly, under the influence of lesions situated in different parts of the brain the various functions comprised under "symbolic thinking and expression" may become dissociated into forms which may be comprised under the headings: (*a*) verbal aphasia, a defect of word formation; (*b*) nominal aphasia, a defective use of names

and want of comprehension of the nominal value of words or other symbols; (*c*) syntactical aphasia, articulation of the word is ill-balanced, the rhythm of the phrase is defective, and there is want of grammatical coherence; (*d*) semantic aphasia (from σημαίνειν, to signify), a want of recognition of the full significance of words and phrases; the patient may understand each word or short phrase, but the ultimate meaning escapes him; he cannot formulate symbolically a general conception.—Congenital Familial Spinal Muscular Atrophies and their Relation to Amyotonia Congenita, by Knud K. Krabbe. Six cases of the former extremely rare condition are recorded, and the published cases of the latter subjected to a critical review. The author emphasises the "radical pathological differences existing between the heredo-familial diseases and other diseases." He considers that "the cases which have been described as amyotonia congenita represented really two different diseases: (1) Amyotonia congenita, a benign disease, which consists of a congenital hypotonia, hyperflexibility and weakness, but no atrophies. It is not familial and can possibly be considered as a retarded development of the muscles; (2) congenital familial progressive spinal muscular atrophy, a type most related to Werdnig-Hoffmann's disease, but congenital, and which bears a certain resemblance to amyotonia congenita clinically, but differs from it in that the muscles show a marked atrophy, demonstrable by the X rays, that it has a tendency to progression, or at any rate not to improvement, and in a certain number of cases it can be shown that the disease is familial.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

PURE GLUCOSE AND PURE ANHYDROUS GLUCOSE.

(BRITISH DRUG HOUSES, LTD., 22-30, GRAHAM-STREET, CITY-ROAD, LONDON, N.)

PURE glucose is extensively used in medical and surgical practice as an intravenous, subcutaneous, or rectal injection. It has been claimed that the substitution of glucose solutions for saline solutions is a step forward in therapeutics, since glucose solutions have no injurious action on the kidneys, and, in addition to a diuretic action, possess notable nutritive properties. An examination showed that the "pure glucose" had a specific rotatory power of + 52·3° (absolute), was free from mineral matter, and had the composition of the monohydrate $C_6H_{12}O_6+H_2O$. The "pure anhydrous glucose" had a specific rotatory power of + 53·2° (absolute), and is accurately described as anhydrous. It is prepared specially for use in bacteriological laboratories and as an excipient for hypodermic tablets. For the first mentioned purpose, however, we are of opinion that anhydrous glucose offers no advantages over the hydrate. It is satisfactory to learn that glucose of this high degree of purity, which prior to the war was a continental product, is now being manufactured in this country.

(1) OSCOL STIBIUM; (2) ASEPTOIDS: NASAL COMP.

(OPPENHEIMER, SON, AND CO., LTD., 179, QUEEN VICTORIA-STREET, LONDON, E.C.)

(1) This is a true colloidal preparation of antimony sulphide (Sb_2S_3), and it is stated to have been used with advantage in the treatment of bilharzia and leprosy. If this is correct the preparation may be found useful in other directions. On analysis we find that 3 parts of antimony sulphide are present in 2000, which confirms the statement that 1 part of antimony (Sb) is present in 2000. (2) These tablets are made from a formula supplied by the late Dr. H. Macnaughton-Jones, which is referred to in his latest work on diseases of the nose, throat, and ear. The ingredients are sodii chlor., sodii bibor., menthol, thymol, eucaine hydrochlor., ol. gaultheriæ, ac. boric et sodii benz. These are made into square-shaped tablets and are not compressed, so that when dissolved in warm water rapid solution is effected.

METAGEN.

(PARKE, DAVIS, AND CO., BEAK-STREET, REGENT-STREET, LONDON, W.)

This preparation is stated to contain the three types of vitamines—the fat-soluble A vitamine, which possesses antirachitic properties, the water-soluble B vitamine, which exerts a growth-promoting and anti-neuritic influence, and the water-soluble C vitamine, which is an antiscorbutic. The material is conveniently supplied in soluble gelatin capsules, each containing 5 gr. It is stated that metagen may be advantageously administered in cases of lowered bodily tone, subnormal nutrition, and in diseases arising from a lack of vitamines in the diet, such as scurvy, beri-beri, marasmus, malnutrition, &c. It is also applicable where it is desired to build up nutrition—e.g., tuberculosis, rickets, simple anæmia, chlorosis, and other blood diseases. Unfortunately, the activity of the vitamines cannot be expressed quantitatively by chemical means, the only methods available being physiological. Messrs. Parke, Davis, and Co. state that the efficiency of metagen has been widely tested in hospital and private practice, and the recommendations concerning the use and mode of administration of metagen are based on the reports of impartial clinicians.

"GADUS" VIRGIN COD-LIVER OIL.

(JOHN BELL AND CROYDEN, LTD., 76-80, KENSAL-ROAD, LONDON, W.)

Messrs. Bell and Croyden are the sole British agents for this oil, which is stated to be prepared in the Lofoten Islands, Norway, from the liver of the cod on the same day that the fish is caught. The oil when analysed was found to have the constants of a pure cod-liver oil, and it also responded to the customary chemical and B.P. tests. The iodine value was slightly lower than that usually found. The oil is pale-yellow in colour and is devoid of any unpleasant smell or flavour. The manufacturers claim that its low viscosity renders it less objectionable to the palate than the thicker oils, with the consequence that it is readily tolerated and does not repeat.

New Inventions.

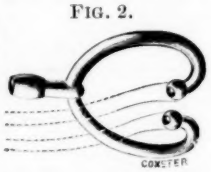
IMPROVED GAS-OXYGEN-ETHER OUTFIT.

THE illustrations show some improvements that have been made for use with my gas-oxygen-ether outfit.

FIG. 1.

Fig. 1 is an improved ether or mixture bottle comprising a three-way valve, below which is a perforated cup that can be raised or lowered upon the inlet tube inside the bottle. The tube is perforated in two places, the upper being inside the cup and the lower one below the cup. The open end of the tube makes a third aperture. A filling funnel is placed behind the valve. The advantages of this bottle are that the anæsthetist can graduate the amount of ether or mixture better than was possible with the older pattern, for with this bottle the gases can pass in three ways: (1) to the patient direct and without any ether; (2) over the surface of the ether or mixture, thus giving quite a small amount; (3) through the ether or mixture when the anæsthesia has to be deepened. Fig. 2 shows a nasal attachment comprising a metal stirrup to which are attached a couple of short soft rubber tubes. I have found this very useful for endobuccal and endopharyngeal anæsthesia, and especially for such cases as diathermy of the tongue or palate, or for œsophagoscopy and bronchoscopy. It is also very useful for some operations upon glands in the neck, enabling the anæsthetist to keep well out of the way of the surgeon. The rubber tubes should be about four inches long. The appliances are made by Messrs. Coxeter and Son, 171, Pancras-road, N.W. 1.

FIG. 2.



H. E. G. BOYLE, O.B.E., M.R.C.S., L.R.C.P. Lond.

London, W.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 19, 1921.

Dermatology in Relation to General Medicine.

THE admirable address delivered before the Medical Society of London last Monday by Sir JAMES GALLOWAY on the relation of skin diseases to internal disorders, which we publish this week, sets forth very clearly the important part that the study of dermatology should take in the training of the general physician. There is a tendency even in these days to consider dermatology as a subject apart, and the average student of medicine is content if he can recognise the eruptions of the specific fevers, a typical case of scabies or ringworm, and a few other common skin diseases, such as psoriasis and impetigo contagiosa. He is not unnaturally appalled at the complexity of dermatological terminology, and when later he is confronted in practice with a skin eruption, which he may or may not recognise, he is inclined to ring the changes on a few ointments or lotions in the hope that one may eventually "touch the spot," without considering the possible connexion between the patient's skin and the general state of health. Yet, as Sir JAMES GALLOWAY aptly says, "the knowledge of external and visible signs may lead to the interpretation of their hidden cause, the recognition, it may be, of a mysterious malady, to its treatment, and the restoration to health of the sufferer." This, it seems to us, is the crux of the whole matter. It is difficult for the consulting physician, and quite impossible for the general practitioner, to become familiar with the rarer diseases of the skin or with the progress of dermatological research; but every student should be taught not only to recognise the commoner dermatoses, but also to interpret the cutaneous manifestations of internal disorders, such as errors of digestion, intestinal intoxication, and the like. He should be made to look at the skin as assiduously as he listens to the chest. That he does not do so is, we think, largely because he is taught dermatology from this wrong point of view: "Here is a patient with a dry scaly rash, the distribution is largely on the extensor surfaces, more particularly on the elbows and knees; the disease is, in fact, psoriasis, and we will order a tar or chrysarobin ointment and increasing doses of arsenic internally"—and that is all. He will be taught that we do not know the cause of psoriasis, but he will probably not be taught that every case of the disease should, if possible, be investigated as completely as if it were an obscure case in the medical wards, that it is important to know whether a patient with psoriasis has any symptoms or signs of rheumatoid arthritis, and that, if such be the case, foci of infection must be carefully sought for and treated, that a complete examination of the whole digestive system must be made, the urine tested for excessive acidity and for indican, and the blood, perhaps, for excess of sugar.

The tendency is, in fact, for the student to learn to label certain eruptions, and to associate with each a certain stock treatment, such as tar for psoriasis and chronic eczema, mercury for impetigo, and sulphur for acne, whereas, except in diseases of purely external origin such as ringworm and scabies, the majority of patients with skin disease require a complete medical examination. Conversely a great deal may be learnt from the appearance of the skin, its colour, the activity of its secreting glands or the presence of pigmentation, in cases of dyspepsia, neurasthenia, and chronic ill-health. This leads us to the consideration of the much debated question of intestinal toxæmia. It would seem that two main types can be recognised:—that in which there is abnormal fermentation of carbohydrate, and that in which excessive intestinal putrefaction occurs. The difference in appearance presented by patients of these two types is very striking. In the former the skin of the face, neck, ears, and scalp is flushed, the sebaceous and sometimes the sweat-glands are hyperactive, the lips are bright red and covered with a kind of scum, the tongue is firm and red, with prominent papillæ, and aphthous ulcers are sometimes present in the mouth. The gastric acidity varies. The urine is usually hyperacid, and as a rule contains no indican. Persons of this type are liable to acne and boils, and to acute seborrhœic eczema. On the other hand, the person in whom intestinal putrefaction is in excess corresponds to the description given by LANE of the sufferer from chronic intestinal stasis. The complexion is sallow; the lips have a bluish tint; the tongue is pale, smooth, and indented at the edges; there is pigmentation around the eyes, in the joint flexures and wherever pressure occurs on the skin, as from corsets; the extremities are blue and cold and in a state of clammy perspiration; and often these unfortunate patients emit a peculiarly offensive sour odour. The gastric acidity is almost always low, and there may be complete achylia. The urine nearly always gives an intense indican reaction. These patients are not uncommonly subject to recurrent attacks of pompholyx. We need not pursue this comparison further; it has been given merely to show that the skin is a mirror in which the state of a person's health may often be clearly visible.

As indicated by Sir JAMES GALLOWAY, the appearance of a cutaneous eruption is frequently the first available clue to the presence of some focus of infection. This is well illustrated by the group of eruptions to which DARIER has given the name tuberculides. As examples may be given the erythema induratum of BAZIN, and the papulo-necrotic lesions that occur on the distal parts of the extremities. These eruptions are evidently inflammatory reactions around tubercle bacilli brought by the blood-stream from some distant tuberculous focus, usually glandular, and coming to rest in parts where the cutaneous circulation is sluggish. The appearance of such lesions may be the first indication that a patient is suffering from active tuberculosis, although nearly all people who develop tuberculides exhibit the stigmata which betray a massive infection with tubercle in early life. In the same way erythema nodosum, and in some cases erythema multiforme, are reactions to a streptococcal infection. The early recognition of eruptions such as these, and of their significance, is obviously of great importance, in order that the patient may be submitted to an exhaustive examination, and be given the treatment necessary to combat the underlying infective condition which the cutaneous lesions have revealed.

Medical Education in China.

A SPECIAL meeting of the medical profession will be held on the afternoon of Monday next, Feb. 21st, at the Royal Society of Medicine, the object being to emphasise the developments which have been made in China in recent years in medical education—developments to which medical practitioners from the United States and this country have mainly contributed. To our readers the information that the profession of medicine is held in the deepest esteem in China will not come as news, for we have been able from time to time to keep them posted in things medical, as they occur in the vast Eastern Republic. Dr. WU LIEN TEH, physician extraordinary to the President of China, published in our issue of May 29th, 1920, a detailed account of medical progress in China since the establishment of the Republic, and especially since the issue of a Presidential mandate in 1915 recognising Western medicine as the proper course of medical practice in China. The *National Medical Journal of China* has brought the story up to date, a recent issue containing, in addition to a varied assortment of quite modern medical articles, an excellent essay by Dr. PETER C. KIANG, showing the keenness and devotion of the Chinese medical student to the calling which he has adopted.

The Republic of China is in a state of transition, so that all vocational education of a modern sort is complicated by the political situation. But the calling of medicine appears likely to be the first to establish itself on an organised basis, chiefly because a greater percentage of medical students than of students in any other faculty stick to the profession of their first choice, practising it faithfully after return from universities or professional schools to which they may have been attached abroad. This is a distinguishing feature of the medical student. Other students, on their return to China from abroad, are prone to change the direction of their work. Chemists and engineers go into the public services or into the employment of banks, and mining engineers drift into commerce; but the Chinese medical man, educated in Europe or America, on returning to his native land invariably practises medicine. And he does this, as many of our own medical men do, not because an easy or lucrative career is open to him, but because, having served his apprenticeship in medicine, no other metier seems worth following. The career of the Chinese general practitioner among his own people is attended with two main drawbacks which make general practice so often hard in this country—the life is physically a wearing one, and the public appreciation of medical efforts is capricious. Criticism, indeed, of the Chinese practitioner appears to be prompt and outspoken, for if a patient's temperature does not abate on the mere appearance of the doctor, the reason why is demanded severely. Public opinion therefore needs to be cultivated, and education of the public earnestly undertaken. But we may be certain that the fact of the medical students sticking persistently and faithfully to their profession, when they return from abroad, will prove a great public argument for a better appreciation of science. The Chinese are notoriously good and honourable men of business, and to them the recognition that medical men prefer their own calling to any other, despite its drawbacks and despite invitations to easier careers, will form a definite proof that the rewards of a life with noble ideal are higher than those of an exclusively material objective, and that the calling must be a high one which obtains adherence on such a basis.

Modern China is ripe for the development of modern medicine. Medical learning in China has passed the first and difficult stage, and now it is necessary that the standards of medical education should be raised, and that hospital practice should be more generally based upon the science of to-day. Dr. HAROLD BALME'S work, prepared under the auspices of the China Continuation Committee, a committee instituted to inquire into the scientific efficiency of mission hospitals in China, indicates a general consensus of opinion in regard to this matter. The institution of this committee, the fine housing of the China Medical Board, and the equipment of the Pekin Central Hospital and Union Medical College alike prove this. The pioneers of medical science in China have to face a considerable difficulty in laying out a medical curriculum for Chinese students, for whom it is necessary to have a bilingual system in medical nomenclature, with the attendant difficulty of securing an exact equivalent of meaning. But a good beginning is bound to have a fruitful issue.

The Sanitary Authority and Encephalitis Lethargica.

AS is well known, acute encephalitis lethargica has been a notifiable disease since Jan. 1st, 1919, and the number of cases notified in the administrative county of London is issued weekly on the authority of the Registrar-General and is recorded in our columns. One of the striking features in the interesting survey of the cases notified in Manchester during 1920, which we publish in our present issue, is that in not a single instance has the spread of infection from one person to another been traced. Not one of the 138 family "contacts" of the disease caught the infection. Dr. W. ST. C. MCCLURE makes the deduction that the disease is not infectious or that the infection is widespread and most people are immune. He, however, "hedges" by the suggestion that until our knowledge becomes more complete we ought to presume the disease infectious or contagious and take precautions accordingly. The fatality of the Manchester cases is very high. The diagnosis was confirmed in 32 cases, of which 17 proved fatal. Of the remaining 15 only 2 have made a complete recovery, 7 are still ill, and 6 at periods varying from two to nine months after the onset are seriously damaged. It seems probable from this high fatality that a considerable number of milder cases have been unrecognised. We believe that experience elsewhere confirms the Manchester experience as to the failure of the patient to spread infection, but that elsewhere the occurrence of a larger number of milder cases has been reported. The value of notification at present is chiefly the facilitation of investigation, and the Manchester Public Health Department, through its staff of medical assistants, has been in a good position to undertake such inquiries.

For most notifiable diseases there is a routine procedure—isolation of the patient, removal to hospital, and disinfection of the house. In the case of encephalitis lethargica, those who have had experience do not hesitate to treat patients in a general hospital. Nor can we see that it is justifiable, in view of the apparently non-infectious nature of the disease, to exclude "contacts" from school or work. Education is

already much interfered with by diseases known to be infectious and we ought not to add another disease to the list without any evidence of its infectivity and simply because it is as yet a mystery. The tendency is rather to regard a mysterious disease as infectious. In OSLER'S Medicine, the edition published in 1901, it is mentioned that the leading Russian medical authorities at that time believed scurvy to be infectious, and OSLER himself classified beri-beri among the specific infectious diseases. In these last years we understand these two diseases better. There is already too great a tendency on the part of the half-informed to create scares about new diseases and we must not pander to that tendency. Notification has its value no doubt as a means of putting the medical practitioner on the alert when he meets with obscure ailments resembling encephalitis lethargica, and of thus facilitating the patient investigation of its cause, but it cannot be said that, in the present state of our knowledge, notification enables the sanitary authority to take any practical steps for the prevention of encephalitis lethargica.

The Prince of Wales, F.R.C.S.

ON the occasion of the birth of the PRINCE OF WALES as third in direct succession to the Crown, a partly humorous but wholly loyal suggestion was thrown out in these columns that, having regard to the increasing part which things medical must play in future Imperial administration, his Royal Highness should be a medical man. The suggestion became a fact on Monday evening last, when at the Hunterian Festival Dinner his Royal Highness was admitted an Honorary Fellow of the Royal College of Surgeons of England. At the time of his birth the constitution of the College made no provision for Honorary Fellows, but in 1900, that being the centenary date of the reconstitution of the College under Royal Charter, the necessary powers were acquired, and the first Honorary Fellow thus admitted was the late King EDWARD VII. The present KING, while Prince of Wales, graciously accepted the same diploma, and now the PRINCE OF WALES has followed his father's and grandfather's suit, being elected among a group of six who have especially distinguished themselves in the war. The other five are the Duke of CONNAUGHT, Colonel-in-Chief of the Royal Army Medical Corps; Dr. PIERRE DUVAL and Professor ANTOINE DEPAGE, respectively selected to represent the medical work of our Allies, France and Belgium; and Brigadier-General J. M. T. FINNEY and DR. CHARLES MAYO, respectively Chief Surgeon to the American Army in France and Adviser to the Army Medical Service in the United States. The PRINCE OF WALES'S right to inclusion in this distinguished group was justified fully by Sir ANTHONY BOWLBY at the Hunterian Festival Dinner, when he described the Prince's work at the front as admirable, his personality to have acted throughout the war in all ranks as a source of inspiration, and his tour of the Empire to have been an unqualified success. The President obviously spoke out of conviction and not out of courtliness, and the PRINCE OF WALES in his reply took the opportunity of paying a tribute to the service of medicine throughout the war in words which clearly had their origin in sights which he had seen and things which he had learned. The impressive part of a dignified ceremony was that it was the outward sign of genuine feeling.

Annotations.

"Ne quid nimis."

THE DISPOSAL OF DOMESTIC REFUSE.

AN inquiry held by the Ministry of Health on Jan. 12th at Sheffield with regard to a proposal to spend £200,000 on a new method of disposing of the city's refuse has more than a local interest. The problem has its economic side and its sanitary aspect. It was shown that the total amount of refuse collected annually is about 130,000 tons from a population of about half a million. Putting aside the 20,000 tons from the privy middens, an incubus which must continue to be dealt with at the destructors till the privy middens are all converted into water-closets, the problem consisted of dealing with the contents of dustbins and so-called dry ashpits. Three methods were considered—viz., the reconstruction and extension of the destructors, tipping, and a special method of sorting and screening the refuse. It was shown that the capital cost of reconstructing and extending the destructors would be from £150,000 to £200,000, while the cost of burning the refuse at the destructors after collection would be equal to a shilling rate, or over £90,000 per annum. Tipping was ruled out largely on sanitary grounds. The tips would have had to be at a long distance from the city, and objection is always raised by the residents of the districts in which they are established. Besides the nuisance from rats, effluvia, paper being blown about, the firing of the tips, and so forth, the cost is always run up by the heavy transport charges.

The third method was the one selected. Plant of a size capable of dealing with the refuse of a population of 40,000 has been in use for some time, so that the method has already had a sufficient trial to enable reliable estimates to be made as to the cost of the process. The plant consists of electrically driven revolving screens, which sort the refuse into constituent parts according to the size of the mesh of the screen. The first material sorted out is a fine dust, about 33 per cent. of the whole, which passes through a $\frac{3}{16}$ in. screen. This dust has a higher manurial value in nitrogen, phosphates, and lime than stable manure, and good reports have been received of it from agriculturalists and golf clubs. The second material removed is a fine cinder which passes through a $\frac{1}{2}$ in. mesh, amounting to about 26 per cent. of the refuse. This fine cinder when made into briquettes, with the addition of $8\frac{1}{2}$ per cent. of pitch and $\frac{1}{2}$ per cent. of tar, has a high calorific value. The third material is large cinder which, owing to its specific gravity, can be separated by a washing process from the heavier residue and has also a high calorific value. Its fuel value is 11, taking coal as 14, and it is used instead of coal for heating the corporation baths. The large cinder constitutes about 18·5 per cent. of the whole. The heavy material which is separated by the washer amounts to about 14 per cent. and consists of stone, shale, broken pottery, while it also contains a certain amount of unburnt coal which falls out with the heavy debris. The unburnt coal is one of the few useful things not used, but its quantity would not justify the cost of sorting. This heavy residue being washed forms a quite innocuous material for tipping, very different from the stuff at present tipped, being more like clean builders' rubbish. The vegetable matter, amounting to between 3 and 4 per cent., will either be burnt in the destructor or pulverised and added to the dust to increase its manurial value, provided a good market is found for the dust. The "tailings" or larger particles, containing tins (1 per cent.), rags (0·4 per cent.), paper (3·6 per cent.), are carried on to a revolving belt where articles of value are picked off by hand. This hand sorting is light work of a quite unobjectionable nature on sanitary grounds and is necessary because of the varying value of the tailings. For example, during the war a good price could be got for the paper; now there is

no market for it. The tins are de-tinned in a furnace and pressed into bales and find a ready market. The oily rags have the oil extracted, the dirty rags are sterilised, and a market is found for the clean remainder and the recovered oil. The total estimated annual expenditure for the new system put before the inspector was £85,000, against which there is an expected revenue from sales amounting to £49,000, leaving a net annual expenditure for the proposed new plant of £36,000. The present annual expenditure in Sheffield on burning and tipping is £50,000, so that the new system is estimated to effect an actual saving of £14,000 per annum. This net expenditure of £36,000 has also to be compared with an estimated annual expenditure of £91,600 if a scheme had been adopted for burning the whole of the refuse of the city at destructors. There was plenty of evidence at the inquiry that the estimated revenue from sales was a very safe one and much below prices which are at present being realised.

If the Ministry's approval is obtained the progress of the scheme will be watched with general interest. Mr. Mortimore (Messrs. Mortimore, Lyon, and Co., Manchester), in his evidence, stated that the analysis of the Sheffield refuse showed it to be similar to that of other towns, and later in the inquiry it was suggested that the dustbins of the country are an untapped source of fuel to the extent of 3,000,000 tons a year. It does not seem likely that the general adoption of gas-fires or central heating will diminish this new source of fuel for years to come, and from the sanitary point of view the new system is eminently desirable. We shall get rid of the nuisances inseparable from tips, and the refuse will be dealt with in a manner which demands a minimum of handling and involves no disagreeable work for those employed in working the system.

BENZYL BENZOATE IN DISEASES OF CHILDREN.

WE have recently[1] called attention to an important new antispasmodic discovered by Dr. David Macht in the pharmacological laboratory of the Johns Hopkins University and to its value in persistent hiccup, whooping-cough, and asthma. Pharmaco-dynamic analysis of the papaverin group of the opium alkaloids, which have a sedative effect on smooth muscle, pointed to the benzyl nucleus as responsible for the sedation. On searching for a simpler compound of benzyl with the sedative effect of papaverin and without its narcotic effect, Dr. Macht found that benzyl benzoate had all the effect of papaverin on smooth muscle and was much less toxic. The field of utility for such a drug, especially in diseases of children, is obviously extensive. Dr. Macht's claims have been confirmed by other observers. In the *American Journal of the Medical Sciences* for January Dr. John Ruhräh has published an important paper on benzyl benzoate in diseases of children. He points out that the drug stops the rhythmic contractions, lowers the tone, and relaxes the spasm of smooth muscle. This action has been observed on the muscle of the intestine, gall-bladder, uterus, and urinary bladder. On the circulation the action is chiefly on the peripheral vessels, producing a fall of blood pressure. But in ordinary cases this action may be disregarded. Dr. Ruhräh has found its action most favourable on general convulsive conditions, though this could scarcely be expected. Thus an infant was circumcised immediately after birth. The wound became infected and 40 to 60 convulsive seizures occurred daily. Four-drop doses of benzyl benzoate, diluted, were given, and later one or two drops at intervals of four hours. The convulsions diminished to half a dozen daily and the child could nurse with comfort and recovered. With regard to whooping-cough, Dr. Ruhräh refers to the notoriously uncertain action of antispasmodics. What quietens one child has little action on another. Belladonna, he finds, gives the best results in the greatest number of cases, but it cannot be left indiscriminately in the hands of the careless. Benzyl benzoate acts fairly well in many cases, lessening the number of attacks, but its action is uncertain. Possibly this may be due to lack of knowledge as to dosage. In bronchial asthma and spasmodic bronchitis he found the effect most happy and more certain than in any other disease. In intestinal colic relief was unusually prompt, and in severe hiccup the results were better than those of any other drug. In pylorospasm (which must be differentiated from cases in which the obstruction is chiefly due to pyloric hypertrophy) atropine proved so satisfactory that other drugs made little appeal. But there are cases in which the amount required to cause relaxation already produced toxic symptoms. In such cases benzyl benzoate is of use. In diarrhœa it may be used to check excessive peristalsis, and, as it does not check secretion, it may eventually replace opium. In spastic constipation it is of value. The drug seems non-toxic, but it is hot and unpleasant to most children, and must be diluted with water, sweetened water, or milk. Older children may take it dissolved in olive oil or in capsules, but plenty of water should be taken at the same time. Ampoules in olive oil for hypodermic use may be had when rapid action is desired. The injection should be intramuscular. Dr. Macht gives the adult dose as 20 minims, but this is too small in many cases. For children the dose may be calculated, according to weight, from the adult dose (taking the maximum, average, and minimum doses as respectively 60, 40, and 20 minims for a patient weighing 150 lb.), or according to age by Young's table.

[1] THE LANCET, 1920, ii., pp. 512, 615, 808.

AN AMERICAN ENDEMIC FOCUS OF LEPROSY.

SOME of the problems associated with leprosy are still unsolved, notwithstanding the advances which have been made in our knowledge of the disease in recent years. Contributions to the literature of the subject are, therefore, specially welcome, particularly when made by earnest and competent observers. In the United States Public Health Reports for Dec. 17th, 1920, two past assistant surgeons of the U.S. Public Health Service, Dr. Mark F. Boyd and Dr. Warren F. Fox, have published a paper entitled "An Epidemiological Study of an Endemic Focus of Leprosy," in which some interesting facts are given respecting the incidence of the disease in a seaport town situated on an island in the Gulf of Mexico, off the coast of Texas, and having a population at present estimated at over 44,000. The name of this seaport is not stated by the authors, but from their description we conclude that the place referred to is the ill-fated port of Galveston. In this area during the past 30 years some 45 cases of leprosy have come under observation, and concerning these various particulars were obtained partly from the patients themselves and partly from local medical practitioners. In addition, 25 other cases were heard of, making a total of 70 in all, but of the latter group little definite information was available, consequently the authors have confined their special inquiries to the first-mentioned 45 cases. Of these 26 are still alive, 13 have died, and the remaining 6, although presumably still living, have left the town and taken up residence elsewhere. Five of the 45 cases were considered to be imported instances, 36 were regarded as having contracted the infection locally, and in the remaining 4 the origin of the disease was too obscure to allow of any statement being made. Omitting the imported cases, of the remaining 40, 7 were negroes, 29 were whites, and the racial origin of 9 was not ascertained. The incidence of leprosy among negroes and whites appeared to be only in proportion to the distribution of the population, but cases were more numerous among whites of foreign-born parentage than among native-born whites. This incidence seemed to be proportionately higher among those of German parentage than among those of other descent. The significance of this is not clear, but it is suggested that it may possibly indicate a greater susceptibility among persons of German ancestry, or perhaps that the strain of leprosy infection prevalent in the affected area may be of Teutonic origin. As regards sex, 25 of the 40 cases were males and 15 females. With

respect to age-distribution, more cases developed their illness between 10 and 20 years than in any other period, though no age-group appeared to be immune. Length of residence in the area seemed to be a more important factor than age in determining the onset of the disease. Most of the leprous patients developed their illness after ten or more years' residence in the town. The bulk of those who suffered were poor persons of the labouring class. Single cases occurred in 19 houses; two houses had each two cases, and in one house there were three cases. The tubercular type was more common than the anæsthetic, the mixed type being more frequent than either of the others. The majority of the patients gave a history of contact or association with a previous case before the development of their own attack.

As a result of their investigations the authors formed the opinion that there existed in the town a number of unrecognised lepers. The incidence of the malady in this area is therefore probably greater than the previous figures would lead us to suppose; in any case, it appears to be higher than in any other of the recognised endemic foci of leprosy in the United States. In the annual report of the Surgeon-General of the U.S. Public Health Service for 1918 it is stated that the number of cases of leprosy in the whole of the United States in that year was 209. The spread of leprosy in this Texan seaport town is apparently due, to a great extent, to contact with recognised or unrecognised cases of the disease. Various other hypothetical modes of spread were considered, and as regards possible transmission of the infection to man by rats or by insects no satisfactory evidence was forthcoming. The relation of a fish diet to the incidence of the disease was also examined, but this was also dismissed as being unsupported by any evidence. In concluding their contribution the authors draw attention to the fact that "absolutely no official control or supervision in any form has ever been exercised over the leprosy cases" in this affected area. It is proper to mention that these studies of leprosy in the seaport town in question were undertaken by Dr. Boyd and Dr. Fox in an unofficial capacity.

THE SUPRARENAL GLANDS IN DEFICIENCY DISEASES.

THE widespread effects of the absence of vitamines in the diet on certain organs apparently remote from their influence is perhaps only just becoming recognised. R. McCarrison, in his observations[1] on the genesis of œdema in beri-beri states that in pigeons suffering from experimental beri-beri the œdema is always associated with considerable increase in the size of the suprarenal bodies and that four-fifths of the animals with enlarged suprarenals show some form of œdema. The adrenalin content was increased proportionately to the weight of the organs. The pigeons had been fed on polished rice heated in an autoclave, until they showed signs of polyneuritis. In 10 out of 22 pigeons œdema occurred. The increase in size of the suprarenals is a true hypertrophy at least of the medulla, and if the increase of the adrenalin content can really be brought into causal relation with the œdema it is possible that this factor may be found to play some part in the production of œdema generally. While the size of the suprarenals appears to have relation to the absence of the antineuritic factor, it would appear that the suprarenals are also affected by diets deficient in the antiscorbutic vitamine, as shown by the experiments of Victor K. La Mer and H. L. Campbell, of Columbia University. These observers fed young guinea-pigs, weighing 250–300 g., on a diet deficient in the antiscorbutic vitamine, and found an increase of weight of the adrenal glands amounting to approximately 100 per cent. when computed on the basis of body weight minus alimentary canal. Control animals which have been subjected to starvation do not show an increase of adrenal weight, which in those fed on scorbutic diet is directly proportional to the time during which their food has been deficient. It is most pronounced in those animals whose life has been prolonged by the partial protection afforded by small but insufficient quantities of tomato juice. La Mer and Campbell interpret the increased weight as indicating a compensatory response to the decreased adrenalin production known to exist in the scorbutic animal, a point which has interest in connexion with the extensive intramuscular and intestinal hæmorrhages found in scurvy. The heart and kidneys are increased on the scorbutic diet, while there is no evidence that the liver is affected by a lack of water-soluble C alone.

[1] Proceedings of the Royal Society, 1920, vol. xci.

TESTING OF CLINICAL THERMOMETERS.

AN announcement was published last week by the Board of Trade that there is reason to believe that numbers of imported thermometers are being offered for sale in this country without having been officially tested. The reminder is therefore timely that, under the provisions of the Clinical Thermometers Order, 1918, no person may sell, offer for sale, supply, or deliver any clinical thermometers which have not been tested, approved, and marked at the National Physical Laboratory. Purchasers should, in their own interests, see that any thermometers offered to them bear the official test mark—namely, a monogram formed with the capital letters N.P.L., followed by two figures denoting the year of test. The requirements apply to foreign thermometers imported into this country equally with those of British manufacture, although clinical thermometers exported from the United Kingdom need not at present be tested and marked.

A BICAMERAL HEART

LAST November a curious specimen of cardiac abnormality was brought before the Section of Medicine of the Royal Society of Medicine by Professor A. Keith and Dr. J. J. MacDonnell, and an illustrated and detailed description of it appears in the current issue of the Society's Proceedings. As Professor Keith remarks, in his report on the specimen, every one of the abnormalities shown has been frequently seen before, but the peculiar combination appears to be unknown. The case was one of complete transposition of viscera, and the apex of the heart was in the right nipple line, but the autopsy disclosed a strange state of affairs. Briefly, there was an apparently ordinary aortic arch, directed to the left, but attached to the heart in front of a dilated vessel, which otherwise was in the place of a normal pulmonary artery. The normally situated ductus arteriosus was patent, and through it the systemic blood passed, for the aortic arch received no blood from its ventricle. This dummy aorta arose from a ventricle which was the ordinary right ventricle, morphologically and descriptively, while the "pulmonary aorta" came from a ventricle to the left and in front of the other. Thus, the ventricles were not transposed, while the aortic stems were transposed so far as their ventricular relations went. The relations between the big vessels are those which would come into being as a result of a reversal of the direction of the line of septum formation in the single aortic stem, in keeping with the general transposition, but not with the left-sided arch. The ventricular position is normal, and it may be pointed out that the heart sometimes does not share in situs inversus. The intra-ventricular conditions indicated that the embryonic development of the ventricular and bulbous regions had been more or less normal, so that the inversion of the aortic septum is all that need be postulated here. But at the auricular end of the heart the auricle on the left side received the two venæ cavæ as well as the pulmonary veins, and there was no inter-auricular foramen, so that the auricle to the right received no blood and could not feed the right ventricle and aortic arch. The pulmonary veins joined into a common trunk—a primitive embryonic stage—and opened into the auricle through what was really a greatly distended sinus venosus or coronary sinus; an additional upper pulmonary vein on the right side, however, opened into the right innominate vein. This, as Professor Keith points out, is doubtless

the remnant of a drainage into an embryonic vena cava on that side. Possibly this last vein represents an opening into the azygos system and thence into the vena cava, and might be looked on as a modified bronchial vein. The other pulmonary veins are apparently in a persistent embryonic stage, but the rest of the arrangements in this curious auricular region would seem to defy probable analysis from a developmental point of view; it is another example of the inadequacy of normal embryology to account for abnormalities under certain conditions, in which we get occasional glimpses of deeper causative genetic factors of which we know nothing. The specimen is a most interesting one as a pathological condition, and it is only necessary to add that it was consistent with a measure of independent life, as the child lived seven months, dying apparently from capillary bronchitis.

HEREDITARY HÆMORRHAGIC TELANGIECTASIA.

IN a review of the literature of hereditary hæmorrhagic telangiectasia associated with familial epistaxis, Dr. Hyman I. Goldstein,[1] of Camden, N.J., who himself reports 11 cases in one family, states that 31 families affected with this disease are on record, as well as several cases which are not altogether typical. Isolated examples of the condition with no other instances occurring in the patients' families have been described. In some cases hereditary telangiectases have been noted in one or several members of a family, but without recurring epistaxis; in others there were persistent recurrent attacks of epistaxis of the familial type, but without telangiectases either in the patient or other members of the family. Males and females are affected alike, and are equally capable of transmitting the disease to their offspring. Hæmorrhage is the one constant symptom. In the great majority of cases it occurs in the form of epistaxis, but in some cases hæmorrhage may occur from the telangiectases on the tongue, lips, fingers, buccal mucous membrane, or even from the rectum. Multiple telangiectases, which constitute the sole characteristic of this condition, are found most commonly on the buccal and nasal mucous membranes and upon the lips. They may also occur on the face, feet, hands, ears, scalp, neck, forearms, and chest. The telangiectases associated with epistaxis may occur in three forms: (1) pin-point; (2) spider form, the most common; and (3) nodular. The lesions are apt to become prominent and increase in numbers between the ages of 35 and 50. Many of the patients present symptoms of profound secondary anæmia. The diagnosis is not difficult. The cases must not be confounded with hæmophilia, hæmorrhagic diathesis, purpura, scurvy, pernicious anæmia, or "the phthisical state with hæmorrhages." The clotting and bleeding time is always normal, and there is no history of hæmophilia. The blood platelets are not appreciably reduced, and the resistance of the red cells remains normal. No general treatment seems to be effective, but local treatment may reduce the number and severity of the hæmorrhages and improve the patient's general condition.

COMPARATIVE RESISTANCE OF TISSUES TO LOCAL ANÆMIA.

AMONGST the many experiments which were made in the attempts to allocate the relative share of blood pressure, blood flow, and the renal tubules in the secretion of urine was the experimental ligature of the renal vein. It was found that its closure for even a very short time led to prolonged cessation of the secretion, and that when this was resumed the urine contained albumin. Loren R. Chandler, of Stanford, California, has now studied the effects of producing a temporary renal anæmia of two hours' duration by placing a ligature about the renal artery of a rabbit. The rabbit is killed from one to four days later, when histological study invariably shows necrosis of practically the entire cortical tubular epithelium, with few, if any, changes in the glomerular and interstitial elements. This method of producing epithelial necrosis with the minimum amount of injury to other elements adds another method for the study of epithelial regeneration and the pathology of renal secretion. It has been applied also to the study of hepatic function and regeneration, and tests have been made of the effects of temporary local anæmia of the liver of dogs. To produce this anæmia Eck's fistulæ were made. Five to seven weeks later the abdomen of each dog was reopened, and temporary ligatures placed about the hepatic artery and portal vein, and the ligatures kept in place from three to 12 hours. The animals were killed two to six days later. During the period of ligation the dogs showed no toxic symptoms. After removal of the ligature they appeared in every way normal until they were killed. At the autopsy the histological examination showed that in those with vessels ligatured for three hours there was no thrombosis, no necrosis or atrophy of the hepatic parenchyma; a moderate degree of fatty degeneration was mainly confined to the central third of the lobule. In the animals subjected to 12 hours of local anæmia there was similarly no thrombosis or necrosis; there was marked fatty degeneration of the central half of the lobule, with slight atrophy of the parenchyma immediately surrounding the central vein. It would appear that the power of the hepatic cells to resist local anæmia is in striking contrast to the sensibility of the secreting renal epithelium. In fact, the infrequency of infarcts in the liver, usually attributed solely to the pressure of the double hepatic circulation, is probably due in large measure to this power. It affords yet another example of the wonderful stability of the liver cells, which, though apparently so simple in structure, are yet so manifold in their functions.

[1] Archives of Internal Medicine, Jan. 15th, 1921.

THE PERSONAL ELEMENT IN EFFICIENCY.

AN Efficiency Exhibition promoted by the proprietors of the *Daily Mail* is being held this week at Olympia, West Kensington, and is to remain open until Feb. 26th. The promoters have shown through their selection and arrangement of the exhibits how interest is growing in the human side of efficiency, in contrast with the technical or mechanical side. The exhibits of two hospitals, St. Mary's and the Middlesex, imply a recognition that efficiency depends upon health, and health in its turn upon medical knowledge. A good idea is given to the public how chemical, physiological, and bacteriological research is carried out; the Middlesex stall is particularly well equipped, and is attracting much attention. In another place the People's League of Health are showing how inefficient in matters of health the nation is to-day, emphasising the need for further research and the necessity for popularising knowledge. In the gallery Major Frank Gilbreth, from America, who is himself in attendance at the exhibition, has a display of unusual interest, setting forth his methods of adding to efficiency by minimising industrial fatigue through scientific motion and time study. The whole of the annexe, placed at the disposal of the Ministry of Labour, is devoted to disabled ex-Service men who have been trained to become efficient craftsmen, and there they may be seen weaving, cabinet-making, printing, laying bricks, and doing a number of other things—a wonderful demonstration of what determined men can do to overcome physical disabilities. The need for the personal and human note, for physiological and psychological health, in order to ensure efficiency, was borne testimony to by both Sir Robert Horne and Dr. Macnamara in their speeches on the opening day. The same factor appeared in planning the scientific conferences which are taking place daily; for the pride of place was given to health questions, covering such diverse subjects as maternity, child welfare, food, milk-supply, industrial hygiene, tuberculosis, and other matters, each discussed by experts. Lady Barrett and Professor W. M. Bayliss presided on Feb. 10th, when Dr. C. W. Saleeby and Professor E. L. Collis spoke. Sir H. Baldwin, Mr. E. B. Turner, and Dr. A. Latham

were among the speakers on the following day. Dr. H. M. Vernon and Professor A. F. Stanley Kent contributed to the conference on fatigue elimination. Dr. S. Russell Wells presided at a discussion on commercial education. We welcome this new note in the community, and consider that should the Efficiency Exhibition do nothing else it will have rendered good service by bringing personal efficiency so prominently before a large public.

TORSION OF THE FALLOPIAN TUBE.

Dr. S. D. Dearborn has reported[1] a case of a very rare condition—torsion of the Fallopian tube. The patient was a married nullipara, aged 50 years. She was vigorous and active. At intervals of a few weeks or months she suffered from pains in the lumbar region and pelvis on both sides, which lasted for a short time, with complete freedom in the intervals. The catamenia occurred every three and a half to four weeks. Five years ago they had been excessive, but of late years they had been normal. After working in the garden she was seized with severe pain in the right loin. Examination showed marked tenderness in the region of the right kidney, the lower portion of which was palpable and freely movable. The pulse, temperature, and urine were normal. On the following day the pain was in the region of McBurney's point, where there was also tenderness. Vaginal examination showed an apparently normal uterus and slight feeling of resistance in both fornices. On the third day the pain occurred at intervals, but was more severe over the whole lower abdomen. There was tenderness over Morris's and McBurney's points. Increased resistance to abdominal palpation, but no absolute rigidity of the recti, and moderate distension were found. The nurse reported a "show" of blood from the vagina on the previous night. Vaginal examination revealed a tender mass behind the cervix. Examination was not very satisfactory because of a fat abdominal wall, distension, and general tenderness. The pulse was 90 and the temperature 100·6° F. The bowels had moved freely and there was no nausea or vomiting. The diagnosis was probably appendicitis with salpingitis and less probably extra-uterine pregnancy. On operation the right tube was found to be of twice its normal size, twisted once and a half on itself, and black as gangrenous intestine. The fimbriated end lay behind the uterus just above the junction with the cervix. The right ovary was of the size of a plum and somewhat darker than normal and it contained several small cysts. The left tube was enlarged to thrice its normal size, slightly injected, and filled with pale, straw-coloured fluid. The appendix was enlarged, convoluted, and deeply injected, and it contained a concretion at its tip. The tubes, ovaries, and appendix were removed. Convalescence was uneventful.

A NEW ANTI-SERUM FOR TUBERCULOSIS.

THE first communication on Mons. Henri Spahlinger's serum treatment for tuberculosis was made to the Académie de Médecine shortly before the outbreak of war by Professor Letulle on behalf of the discoverer. Mons. Spahlinger is a Swiss bacteriologist who has spent several years in a painstaking endeavour to unravel a very knotty problem—viz., the use of anti-serums in the treatment of tuberculosis. The report made six years ago was preliminary to more extensive study and contained records of a small number of selected cases treated by a few physicians in London and Paris. A further communication has now been given to the medical public in a report made to the Académie des Sciences, on behalf of Mons. Spahlinger, by Professor D'Arsonval. This report has already attracted the attention of the daily press both in Paris and in London. It contained two sets of recorded cases by British physicians, Dr. A. H. Croucher and Dr. Leonard Williams. The former states that the patients treated by him with Spahlinger's method in 1913 are still alive and well, including two cases of laryngeal tuberculosis. All were cases of advanced pulmonary lesions at the time of treatment, and they are now all at work with their disease apparently quiescent. Dr. Williams gives an account of a series of cases of surgical tuberculosis and of open pulmonary tuberculosis with bacilli in the sputum and physical signs of advanced disease. He reports that when examined in October, 1920, these cases were found to be free from active tuberculosis, and that the condition of the lungs in the pulmonary cases was remarkably good. No bacteriological details are given in the report, but we note that Professor D'Arsonval's communication states that the treatment is based on the progressive destruction of tubercle toxins and subsequent active immunisation. According to this communication Mons. Spahlinger divides his cases into two classes: (1) acute cases treated by means of "complex antitoxic and bacteriolytic" serums; and (2) chronic cases treated by vaccination with a series of antigens and ferments, the former being derived from the bacillary substance of the tubercle bacilli. Patients are finally treated with a graduated series of injections of these different antigens given separately. It is impossible to make fair or useful comment on Mons. Spahlinger's work at its present stage. We must await further enlightenment in regard to those laboratory data without which an immunological remedy cannot be claimed as specific.

[1] Boston Medical and Surgical Journal, Jan. 6th, 1921.

A FAVOURED UNIVERSITY.

SHORTLY before the war Mr. G. A. Wills and Mr. H. H. Wills decided to build for the University of Bristol a block of new buildings, to include libraries, an assembly hall, and a tower, in memory of their father, Mr. Henry Overton Wills. The war not only delayed the accomplishment of this purpose, but it also greatly increased the cost. Last week we chronicled the intention of the donors to add a sum of £200,000 to their former benefaction in order to complete the buildings, which are already making good progress. From the same source the University will also receive money for the building and equipment of a new physics department, as well as a public hall to be used as a students' union and various hostels and halls of residence for students. In the near future the University of Bristol will find itself possessed of a fine set of buildings, largely through the repeated generosity of one family. The sensational Rockefeller benefaction to University College Hospital and Medical School led to some criticism of the meagre support given for educational and research purposes by wealthy men in this country. Bristol is exceptionally happy in having stimulated the local patriotism of citizens who, having once decided to support the University, keep watch over its changing needs and supplement with such a lavish hand their previous benefactions.

ALBUMINURIA AND EOSINOPHILIA IN SCABIES.

Dr. Joseph M. Hayman, jun., and Dr. Temple S. Fay,[1] of Philadelphia, have made a study of the frequency of albuminuria and eosinophilia in scabies. Albuminuria was found in 10, or 20·4 per cent., of 49 scabies patients examined. In these 10 cases the eruption was generalised, and none showed any peculiar type of lesion, nor was pustulation especially in evidence. In all but one case, in which there was a light cloud, the albuminuria was slight and transient. Hyaline casts were occasionally present in one case, but in none were the urinary findings of any clinical significance. As regards the cause of the albuminuria, the writers exclude secondary pyogenic infection as a factor, for albuminuria occurred independently of pustulation in 100 per cent. of these cases. Treatment was undoubtedly reponsible for the phenomenon in some cases, as was shown by the higher incidence of albuminuria in treated cases (23 as compared with 17 per cent.). The frequency of albuminuria was too high to justify the supposition that it was always the manifestation of pre-existing nephritis, and it was also

[1] Archives of Dermatology and Syphilology, January, 1921.

too transient to indicate a genuine nephritis. Like Nicholas and Jambon, Dr. Hayman and Dr. Fay regard the albuminuria as a manifestation of the cutaneous disease itself, but reject three of the factors incriminated by the French writers—viz., suppression of the skin function, toxin of the parasites, and absorption of products from detached cells in the cutaneous lesions. The most probable explanation seems to be a renal hyperæmia caused by irritation of peripheral nerves at the skin lesion similar to what occurs in various vaso-motor disorders such as Raynaud's disease, angio-neurotic œdema, and occasionally pemphigus. In 55 scabies patients the blood was examined by the writers for eosinophilia, with the result that 32 patients, or 58 per cent., showed 5 per cent. of eosinophils or more, and 20 of these, or 36·6 per cent. of the series, showed 7 per cent. of eosinophils or more. The degree of eosinophilia was, in general, proportional to the extent of the infestation, the higher percentages being found in the more extensive attacks, and the low or normal counts in cases where the lesions were very recent or slight. There was no increase of blood eosinophilia in the neighbourhood of the cutaneous lesions. As it is so variable in itself and so common in other skin conditions, the writers do not regard eosinophilia as of any value in the differential diagnosis of scabies.

SIR WILLIAM RICHMOND.

THE death, after protracted illness, of Sir William Blake Richmond must not pass unnoticed in these columns, for his interest in and admiration of scientific medicine was unbounded, and he was a first-class topographical anatomist, as well as a man of all-round accomplishment. As a painter he excelled both in portraiture and imaginative landscape: he was a bold and original sculptor; and his scheme of decoration for St. Paul's Cathedral, though much criticised, remains in the opinion of all a wonderful piece of work. But it is as a sanitary reformer that he should be gratefully remembered by medical men. No doubt the destructive influence of coal-smoke upon pictures, sculpture, and decorative façades made him its declared enemy, and when the Coal-Smoke Abatement Society was started it was natural to find Sir William Richmond its President, with Mr. O. B. Thomas as secretary, and Dr. Harold Des Vœux as treasurer. Art and medicine here joined hands in a piece of constructive hygiene for the benefit of posterity, and the town-dweller will gain immensely in the future as the ideals of the society obtain realisation.

Miss Anne Louise McIlroy, M.D., D.Sc. Glasg., has been appointed to the University Chair of Obstetrics and Gynæcology, tenable at the London School of Medicine for Women. Dr. McIlroy will direct the Obstetrical and Gynæcological Unit at the Royal Free Hospital.

THE summer meeting of the Section of Laryngology of the Royal Society of Medicine will be held on June 2nd and 3rd, when a dinner in connexion with the meeting will be held. The agenda will include papers and demonstrations, an exhibition of instruments, and a museum.

UNDER the auspices of the Fellowship of Medicine Dr. Gustave Monod, of Vichy, will deliver a lecture at the Royal Society of Medicine, 1, Wimpole-street, London, W., on Wednesday, Feb. 23rd, at 5 P.M. The lecture will be illustrated by a retarded kinema, and will be a study of athletic movements, cardio-pulmonary circulation, and an analysis of golf shots by this means. Dr. Monod, who is paying a visit to this country in the interests of the Association pour le Développement des Relations Médicales of the Paris Faculté de Médecine, will also speak on the closer relations between French and British medicine. Members of the profession and their friends are invited to be present.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE HUNTERIAN ORATION: ADMISSION OF H.R.H. THE PRINCE OF WALES TO THE FELLOWSHIP.

ON Monday last the Hunterian Oration of the Royal College of Surgeons of England was delivered in the afternoon at the College by Sir Charters J. Symonds, the Orator of the year (see p. 359). Sir Charters Symonds, using the career of Sir Astley Cooper for the purpose, illustrated the influence which Hunter had upon medical progress and medical education, acting through a group of his enthusiastic and distinguished pupils. He further made an eloquent plea for the simplification of the medical curriculum, urging that more stress should be laid on the clinical side.

The Hunterian Festival Dinner.

The Hunterian Festival Dinner was held in the library of the College the same evening, Sir ANTHONY BOWLBY, the President of the College, presiding, His Royal Highness the Prince of Wales being present and a large group of distinguished guests. After the loyal toasts the PRESIDENT proposed the health of the Prince of Wales in the following terms:—

May it please your Royal Highness: The Royal College of Surgeons of England is the descendant of two civic institutions which date back to the fourteenth century—namely, the Guild of Surgeons and the Company of Barber Surgeons—but it was founded by Charter as a Royal College in the year 1800. It was not, however, until the College celebrated its centenary in the year 1900 that it became empowered to create Honorary Fellows, and its first Honorary Fellow, Sir, was your illustrious grandfather, King Edward VII., who, while Prince of Wales, was graciously pleased to accept our diploma in June, 1900. At a later date His Majesty King George bestowed upon us a similar distinction, and I have now the honour of welcoming your Royal Highness as the third Prince of Wales to become an Honorary Fellow of the College.

Since the election of its first Honorary Fellow the College has from time to time elected other Fellows, and has generally done so in order to commemorate some important event. Following this precedent, it proceeded on July 24th, 1919, to commemorate the close of the Great War by electing six honorary Fellows from those who had specially distinguished themselves in the war, and it was under these circumstances, Sir, that we requested you to allow us to propose your name. We know the encouragement that your presence has been at the Front; we appreciated your zeal and keenness for everything that benefited our soldiers; and, above all, we admired the spirit in which you performed the duties allotted to you as an officer in His Majesty's army.

On the same date we elected His Royal Highness, the Duke of Connaught, not only as a representative of the Royal House who had been closely associated with the army all his life, but also because he was the Colonel-in-Chief of that Royal Army Medical Corps, which had served with such great distinction, and won for itself such universal praise. We elected Dr. Pierre Duval, the distinguished French surgeon, and Dr. Depage, the equally eminent Belgian professor, both of whom had so closely coöperated with us in the field and had personally attended many British soldiers.

Finally, we elected two representatives of our sister nation, the United States of America, and we chose Brigadier-General Finney, the "chief surgeon" to the American army in France and the professor of surgery at Baltimore, and Charles Mayo of Rochester, who had acted as adviser to the Army Medical Service in America, and whose fame is world-wide. The medical professions of Great Britain and of the United States have for many years enjoyed the closest coöperation and friendship, and we were in no way surprised that, as soon as ever the drums of war beat to arms, the surgeons of America sprang to our aid. Within a very few months they supplied the personnel of six general hospitals and, at a later period, over one thousand of them served in our army in France pending the arrival of their own troops. They served in our base hospitals, in our regiments, our field ambulances, and our casualty clearing stations during the third battle of Ypres, and amongst them we were especially glad to welcome some of our own Honorary Fellows.

Such, Sir, is a brief record of the claims of the Honorary Fellows elected as representatives of our Allies at the time when you consented to accept our Diploma, and the College has never been more fortunate than in the distinguished names which it has been able to add to its roll at the end of the Great War. The Royal College of Surgeons performs

various public duties which I will not detail. It is the national custodian of the unequalled Hunterian Museum. It possesses a most valuable library open to the whole medical profession; and the Members and Fellows who have passed its examinations number, at the present time, nearly 18,000. Our great master, John Hunter, was the Surgeon-General to the army for some years before his death in 1793, and ever since his time large numbers of men holding our diplomas have served with the Imperial Forces of the Crown. The present Chief Medical Officers of the Navy, of the Army, and of the Air Force, are all Members of our College, and several thousand of our Fellows and Members served in the late war. Over 350 of these gave their lives for their country, and your Royal Highness knows from your own experience in France that these lives were not given in vain.

We, Sir, in common with all sections of the community, have watched with the deepest interest both the career of your Royal Highness in the war, and also your more recent and invaluable missions to those great British possessions overseas which have so gallantly supported our common cause. We recognise that, both in war and in peace, in France and in the Dominions, you have been a fertile source of inspiration and of good fellowship, and, at the same time, we like to recall that, however far you may have roamed, you have not visited a dominion or a colony in which our College was not represented. We may, indeed, justly claim that, while the heart of our College is in England, our Fellows and Members circulate throughout the world. You, Sir, have been frequently described as "Britain's best Ambassador," but, if I may say so, you are far more than that. An Ambassador is but the delegate of a friendly country to a foreign nation, while you are a living and indispensable link in that human chain of common aspirations, common ideals, and common patriotism which binds together all parts of our great Empire in a bond which is infinitely more enduring and unbreakable than all the Treaties that ever have been or ever will be written.

We use no mere form of words when we say that we fervently trust you may long live in health and happiness to further the good work for the Empire you have so successfully begun. In the name of the Royal College of Surgeons of England, Sir, I beg to thank you most heartily for coming amongst us this evening, and for doing us the honour of becoming an Honorary Fellow.

H.R.H. the PRINCE OF WALES then signed the roll of the Fellows of the College and returned thanks to the President and Council for his election in sequence to the election of his grandfather and father, mentioning also that he was proud to receive the diploma at the same time as the Duke of Connaught and the eminent group of surgeons from Allied countries. He admitted that before the war neither he nor any of his contemporaries had much idea what the letters F.R.C.S. meant, but the war brought home to them, and indeed to everybody, the full significance of the initials, as representing the long years of progressive research and experiment of surgery.

"Before we went out to the front," he said, "speaking for myself and my contemporaries, we began for the first time to take a practical interest in surgery. The doctors of our units lectured to us and our female relatives and friends practised on us, while later, those who got in the way of a Hun bullet or shell became passive subjects for surgical work. All who served in the Great War had great or small dealings with your profession and its members, and I have never heard anything but the deepest gratitude for the medical branches of both Services and those who belong to them, from the surgeons—those who had regular commissions, and thousands of them, many members of this College, who joined up—down to the sick-bay stewards, and, in the case of the army, the orderlies. I include here those eminent surgeons who, like our chairman, gave their valuable time and their help and their advice. Among the most gallant episodes of the war are those of battalion medical officers in the army and their small staffs of stretcher-bearers. The work done by our surgeons and by our doctors is one of the finest chapters in the history of the war, and there is no doubt that the fact that the men knew that if they were wounded they were going to be well treated cheered them up more than one can understand.

It is in this building that we are sitting in to-night that so much of the work and the knowledge which made all this possible had its origin. Knowing what that work was, having seen something of it for myself, and realising what is being done here now, makes me doubly proud of the honour which has been done me to-night by having been admitted to your Fellowship. Thank you very much."

The toast of the memory of John Hunter having been drunk in silence, Sir CHARLES BALLANCE, Senior Vice-President of the College, proposed the health of the visitors in a speech in which he vaunted eloquently the beauty of surgical work, its indispensability, and the inexpressible satisfaction given by its happy accomplishment. He mentions as particular examples of surgical progress the successful experiments upon the transplantation of organs, and the rejuvenescence of aged hairless rats by a slight operation. He alluded humorously to the vista which such procedures opened up.

The toast was replied to by the SPEAKER of the House of Commons, who said there were three professions—surgery, law, and politics—to the last two of which he himself belonged—which were absolutely indispensable. No one went through life without consulting the doctor or the lawyer, or cursing the politician. They had, he said to a highly amused audience, a collection of rats in his own Chamber, and some of them were hairless, but there was no great desire to see them rejuvenated, while he indicated that rejuvenescence had one drawback, it was likely to stop promotion. He bore testimony to the good work done by members of the medical profession in Parliament.

Sir GEORGE PARKIN proposed the health of the Hunterian Orator, congratulating his fellow Canadian, Sir Charters Symonds, whose admirable work in the war was known to everyone present, on reaching the great distinction in his profession implied by his selection to deliver the Hunterian Oration. He pointed out that, whereas up to quite recent times the colonies and distant possessions had drawn from the mother country their distinguished leaders, now a reflux had commenced, and we were witnessing the mother country receiving gladly the services of the children from her outlying provinces. This interchange of work and personnel between all parts of the empire he happily compared with the discovery by Harvey of the circulation of the blood.

Sir CHARTERS SYMONDS, having briefly responded, a very successful dinner came to a close.

ROUMANIA.

(FROM OUR OWN CORRESPONDENT.)

The Health of the City of Budapest.

THE Statistical Bureau of the city of Budapest has just issued its report for the year 1920. Every year some new feature is introduced, and in this issue a summary of the statistics appears on the first page, giving at a glance the condition of public health during the past year. The population of the city is nearly 1,000,000, the average density of distribution 34·06 per acre. The birth-rate was 19·1 and the death-rate 15·06. Of the total deaths about 1 in every 4 (125 per 1000 births) was under 1 year. The zymotic death-rate was 2·28 per 1000. The birth-rate has been steadily falling since 1914, when it was 29·44 per 1000, and is at present lower than in any other capital of Europe, except Vienna. To compensate for this the low annual death-rate constitutes a record in the annals of the city. Ten or fifteen years ago 18–19 per 1000 was a good average, and in the "sixties" and "seventies" such figures as 23 or 27 per 1000 were common. The age-distribution of deaths was much the same as in former years; the city has been comparatively free from serious zymotic diseases, but whooping-cough and diphtheria have been somewhat more prevalent. Three cases of hydrophobia, following rabid dog bites, occurred. Deaths from tubercle show a slight but definite decline; deaths from cancer remain fairly stationary.

The number of notified infectious diseases totalled 5219 cases, showing a slight decrease from the preceding year. Scarlet fever was much less, but diphtheria was more prevalent. No small-pox case occurred at all. Only one outbreak of typhus occurred, being limited to one street. Typhoid was twice as frequent on the right bank of the Danube in Buda, which lies much lower than Pest; diphtheria was very much more prevalent in Pest and its suburbs. The increase of diphtheria is the chief fact the sanitary authorities have

to face. The cause of this is not apparent. It is not connected with milk-supply or obvious sanitary defects, and is most common in the best parts of the city.

A Disputed Fee.

An eminent Roumanian surgeon, recently summoned to a member of the English Mission, performed upon the latter an operation for incarcerated hernia. The fee asked by the doctor was 10,000 lei, the charge including cost of 14 days' residence in a sanatorium. The Englishman considered the fee excessive, and offered 5000 lei. This the doctor refused, and instituted legal proceedings in order to recover the amount claimed. The case went against the surgeon, who then gave notice of appeal; the Court of Appeal has now confirmed the decision. The surgeon was allowed 5000 lei, and had to pay the costs of both actions, amounting to about 1200 lei.

An Incorrect Diagnosis.

A case of considerable importance to the medical profession has recently been tried at the Bucharest Court. It appears that the porter of a hotel was attended for a skin disease by a medical man, who made a diagnosis of syphilis. The patient's wife thereupon left him, and the secretary of the hotel discharged him. The patient was then informed by a club doctor that his malady was not syphilis, but simply scabies. The man sued his own medical attendant for damages, but did not claim his wife. The nature of the disease does not appear to have been disputed at the trial. The main point at issue was that of negligence. The judge held that the plaintiff's discharge was the direct consequence of the error, and awarded him a sum equivalent to six weeks' salary, and costs.

Sleeping Palsy in Roumania.

Two cases of encephalitis lethargica recently occurred in an infantry regiment stationed at Craiova. Up to the present the source of infection has not been detected, although Professor Langier, chief medical superintendent of the town, has made careful investigations. Extensive preventive measures have also been instituted.

Hiccup Epidemic in Budapest.

The present epidemic of hiccup is the second which has occurred in Budapest: the affection is apparently of a less serious type than previously, although serious cases were observed, and one case ended fatally with symptoms of syncope. Nervously disposed subjects are chiefly affected, and suggestive therapy is of great value. In a case of Dr. Balint, lecturer on Internal Medicine at the University of Budapest, the hiccup ceased instantly when he shouted to the patient: "Leave off that hiccup, otherwise you will die!" In other cases light faradisation stopped the attack. Where treatment is of no avail the hiccup ceases naturally after four or five days.

Jan. 24th.

BRIGHTON AND HOVE DISPENSARY.—In acknowledgment of his services in organising an Oriental bazaar, which realised £1035, in aid of Hove Hospital, the Hove branch of the Brighton and Hove Dispensary has made the Mayor and Mayoress of Hove (Councillor and Mrs. F. W. A. Cushman) honorary life governors.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce the early appearance of "Critical Microscopy: How to get the best out of the Microscope," by Dr. A. C. Coles; "Ammonia and the Nitrites," by Dr. E. B. Maxted; and an eighth edition of Mr. Bolles Lee's "Microtomist's Vade-Mecum," under the editorship of Dr. J. Bronte Gatenby. For this edition Professor W. M. Bayliss has written a new chapter on the Theory of Dyes and Staining; Dr. Da Fano has recast the chapters on Neurological Methods, and Dr. A. Drew has written a new section on Protozoological Techniques; the chapter on Bone and Teeth has been revised by Dr. J. Thornton Carter; Dr. W. Cramer and Dr. Gatenby have written a special section dealing with the study of Fatty Substances.—Messrs. Kegan Paul, Trench, Trübner, and Co., Ltd., will publish at an early date a translation of "Das Liebe Ich" ("The Beloved Ego"), by Dr. Wilhelm Stekel.

Public Health.

SCHOOL MEDICAL SERVICE:

REPORTS OF SCHOOL MEDICAL OFFICERS.

Derbyshire.

THE total number of children enrolled as attending the 168 council and 212 voluntary schools under the Derbyshire Education Committee in 1919 was 76,527; of these 24,791 were systematically examined in the code groups, and in addition 2083 were dealt with as special cases. In the former category 4026 were found to be in need of medical treatment (16·24 per cent.), while an additional 39·68 per cent. were recommended to be kept under observation. The defects most prevalent were, as usual, those of the throat and eyes. Enlarged tonsils, or adenoids, or both, were found in 4780 children, treatment being considered necessary in 1505 cases. The eyesight was sufficiently defective to need treatment in 1638 children, and in addition 1981 required to be kept under observation. Organic heart disease was diagnosed in 190 children, of whom 48 were referred for treatment. The remaining 142 cases "require to be kept under observation," but apparently no medical treatment is considered to be necessary or desirable, although they are classified as "organic." No particulars are given as to the nature or degree of organic heart disease that is considered not to require medical care, the responsibility for the health of these children in school being left to the respective teachers concerned, who (it is to be presumed) have been warned. Mention is made of the connexion between heart disease and the presence of adenoids, and it is recommended that such cases should be watched and not allowed to remain in school in damp clothing. Dr. J. Perrin Brown, reporting on the work at the Tonsil and Adenoid Clinics, emphasises the fact that this is not merely concerned with affections of the nose and throat, but that "its chief value is that we are dealing with the Beginnings of Disease; 30 per cent. of the tonsils recently enucleated have been found to contain tubercle bacilli. This is essentially preventive treatment; we have caught the tubercle bacillus at its port of entry. Had it been left the sequence would have been—enlarged cervical glands, subsequently infection of the glands in the lungs, and finally infection of the lungs themselves." He also advises that every child suffering from early heart disease should be referred for an opinion whether the tonsils should or should not be enucleated. Breathing exercises, as usually carried out, may sometimes really make matters worse, and require careful watching; the teeth must be set right and the nose kept free from mucus, and every expiration made as complete as possible. As many as 640 throat operations have been done during the year at the Derby and Chesterfield throat clinics, and similar clinics will be opened at other centres shortly. The county council has purchased Bretby Hall and 446 acres of surrounding land for a sanatorium and open-air school for tuberculous and pre-tuberculous children. Dr. Sidney Barwise, who presents this report as school medical officer, repeats his former summing-up, which all medical authorities will heartily endorse, that "by keeping the children's teeth sound, by physical exercises, by open-air schools, and the provision of baths, the bulk of the diseases we now find in the schools would be prevented."

Perth County.

The annual report of the school medical officer shows that out of a school population of 18,288, 8048 children were medically examined during the school year ending July 31st, 1920. Of these 5517 came under the heading of routine inspections, 999 were special cases, and 1532 re-examinations. Eighty per cent. showed defective teeth, while in the same batch of children there were only 7 cases of pronounced rickets and 36 showing slight signs of the disease. Bad vision occurred in 4·9 per cent. of the cases. Dr. D. J. McLeish complains

of the inadequacy of physical instruction in the schools. A county organiser of physical education is, however, to be appointed, and this ought to go far to remedy matters. Following up is done in the city of Perth by school nurses, and the children attend clinics for treatment, while in the country districts lists of defects are sent to the district nurse, or failing her to the head teacher, who reports as to whether treatment has been carried out or not. An apparently very necessary campaign against insanitary conditions in the schools is being vigorously carried out in this county.

Liverpool.

Of the 137,430 children on the school rolls at Liverpool in 1919, 27,890 were examined systematically in the code groups of entrants and leavers, as well as 4436 special cases. In the former category the chief defects requiring treatment were those of eyesight (1766) and of the nose and throat (1694); among the children specially examined 1846 and 481 were found to need treatment for these two conditions respectively. The presence of organic heart disease was detected in 52 children (0·018 per cent.) in the code groups; treatment was considered necessary in only 11 cases, the remaining 41 being recommended for observation only. No children were found to be suffering from definite pulmonary tuberculosis needing treatment among the 27,890 systematically examined; 3 only were recommended to be kept under observation; and in addition 12 suspected cases were recommended for treatment. There are, however, 389 children suffering from the pulmonary form excluded from school, but kept under observation, and 378 non-pulmonary cases attending physically defective schools or (if their condition enables them to do so) the ordinary school. Only 59 children (0·21 per cent.) were found to be suffering from malnutrition requiring treatment among the code groups; besides these 182 were kept under observation. Two new clinics were opened during the year, and the total attendances at the five clinics now at work amounted to 80,123, as compared with 26,762 in the previous year. The schools were closed in the early part of the year on account of influenza, and there was also a prevalence of measles and whooping-cough, though less than in 1918. Dr. E. W. Hope, the medical officer of health for the city and school medical officer, refers to an important point in connexion with the treatment of defective eyesight; altogether 2245 new cases were treated, the number having steadily fallen since 1915 (when 5068 were seen), owing to arrears having been gradually overtaken. But "it is still a matter for serious comment that, having obtained glasses, a large proportion of the children do not wear them regularly, even at school." Many glasses get broken, or lost, and are not replaced. If glasses are provided, but not worn, there is a waste of money by the parents, of time and skill by the oculist and optician, and of money, time, and skill of the educational authority, representing the whole body of ratepayers. When glasses are not obtained, though prescribed by the oculist, or if obtained not worn, disciplinary measures should be taken to enforce their use in school (which is quite practicable), and every effort made to ensure their use at home, through the agency of the Care Committee. Mr. Alfred Harris, inspector of physical training, shortly describes the excellent work carried on in connexion with the Sports Committee of the Liverpool and District Teachers' Association; amongst many very satisfactory items, not the least is the statement that 3504 swimming certificates were awarded, and of these 667 were won by girls.

Eastbourne.

At Eastbourne DR. W. G. Willoughby states that "the most extensive group of defects is that of the nose and throat, especially enlarged tonsils and adenoids." Out of a total of 1625 children examined in the code groups in 1919—these forming 29·14 per cent. of the number on the registers—no less than 155 were found to require treatment for these affections, and 99 others needed to be kept under observation; 83 other children were specially brought forward to be examined on this account, of whom 65 were recommended for treatment; therefore 15·6 per cent. of the code group children, and 33·6 per cent. of the special cases were considered to be suffering, more or less, from nose and throat defects. This would hardly be expected at a seaside health resort. Only one definite case of pulmonary tuberculosis was found to require treatment; and, though 16 cases of organic heart disease were diagnosed, none were recommended for treatment. There were 55 cases of anæmia, of which 37 were sufficiently marked to need treatment. Dr. Willoughby states that an open-air school is contemplated, which no doubt will benefit these anæmic and tuberculous children. The only other physical defect of frequent occurrence was that of vision, 72 children needing glasses among those examined in the code groups, besides 35 others specially brought forward on this account.

URBAN VITAL STATISTICS.

(Week ended Feb. 12th, 1921.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate population estimated at 18½ million persons, the annual rate of mortality, which had been 13·3, 12·3, and 13·1 in the three preceding weeks, rose to 14·0 per 1000. In London, with a population of 4½ million persons, the death-rate was 13·2, against 13·3 per 1000 in the previous week, whilst among the remaining towns the rates ranged from 4·1 in Eastbourne, 5·7 in Dewsbury, and 7·5 in Ealing, to 23·0 in West Hartlepool, 23·4 in South Shields, and 25·7 in Southport. The principal epidemic diseases caused 250 deaths, which corresponded to an annual rate of 0·7 per 1000, and comprised 72 from infantile diarrhœa, 71 from diphtheria, 60 from whooping-cough, 24 from scarlet fever, 19 from measles, and 4 from enteric fever. Whooping-cough caused a death-rate of 1·2 in Swansea and 1·7 in Wigan, and diphtheria of 2·2 in West Bromwich. There were 3945 cases of scarlet fever and 2770 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 4018 and 2767 respectively at the end of the previous week. The causes of 37 of the 4997 deaths in the 96 towns were uncertified, of which 6 were registered in Birmingham, 5 in Gateshead, and 3 each in London and Liverpool. During the week 80 cases of pneumonia, 6 of cerebro-spinal fever, 2 of dysentery, and 22 of encephalitis lethargica were notified in the administrative County of London, as compared with 105, 2, 4, and 29 respectively, in the previous week.

Scottish Towns.—In the 16 largest Scottish towns, with an aggregate population estimated at nearly 2½ million persons, the annual rate of mortality, which had been 15·8, 16·3, and 14·9 in the three preceding weeks, rose to 17·4 per 1000. The 380 deaths in Glasgow corresponded to an annual rate of 18·0 per 1000, and included 36 from whooping-cough, 8 from infantile diarrhœa, 5 from diphtheria, and 1 each from small-pox and scarlet fever. The 150 deaths in Edinburgh were equal to a rate of 17·5 per 1000, and included 4 from diphtheria, 3 from whooping-cough, 2 from measles, and 1 each from enteric fever and scarlet fever.

Irish Towns.—The 153 deaths in Dublin corresponded to an annual rate of 18·9, or 4·8 per 1000 above that recorded in the previous week, and included 4 each from diphtheria and infantile diarrhœa, and 1 from scarlet fever. The 128 deaths in Belfast were equal to a rate of 15·9 per 1000, and included 13 from whooping-cough.

VITAL STATISTICS OF LONDON DURING JANUARY, 1921.

IN the accompanying table will be found summarised statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases notified in the table was equal to an annual rate of 10·4 per 1000 of the population, estimated at 4,531,971 persons in the middle of 1920; in the three preceding months the rates had been 15·7, 15·2, and 11·9 per 1000. Among the metropolitan boroughs the lowest rates from these diseases were recorded in Chelsea, the City of Westminster, St. Marylebone, Holborn, the City of London, and Lambeth; and the highest in Bethnal Green, Poplar, Bermondsey, Deptford, Greenwich, and Woolwich. The prevalence of scarlet fever was 17 per cent. less than in the preceding month; this disease was proportionally most prevalent in Hammersmith, Bethnal Green, Poplar, Bermondsey, Deptford, and Woolwich. The Metropolitan Asylums

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1921.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1920.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,531,971**	—	**2102**	**1270**	—	**21**	—	**37**	**174**	**11**	**1**	**3616**	**10·4**	—	**7**	**23**	**94**	**20**	**3**	**74**	**221**	**0·6**	**4348**	**12·5**
West Districts:																								
Paddington	149,673	—	51	55	—	—	—	2	5	—	—	113	9·8	—	1	—	7	1	—	4	13	1·1	155	13·5
Kensington	164,177	—	58	28	—	1	—	2	7	—	—	96	7·6	—	1	—	2	1	—	3	7	0·6	199	15·8
Hammersmith	136,200	—	94	34	—	—	—	3	2	—	—	133	12·7	—	—	2	—	—	—	2	4	0·4	130	12·4
Fulham	158,621	—	81	53	—	1	—	6	7	2	—	150	12·3	—	—	—	5	—	—	3	8	0·7	137	11·3
Chelsea	62,987	—	12	10	—	—	—	—	2	—	—	24	5·0	—	—	—	1	—	—	—	1	0·2	79	16·3
City of Westminster	132,615	—	21	24	—	—	—	—	9	—	—	54	5·3	—	—	—	6	—	—	2	8	0·8	115	11·3
North Districts:																								
St. Marylebone	101,856	—	24	16	—	1	—	—	3	—	1	45	5·8	—	—	—	2	1	—	—	3	0·4	98	12·5
Hampstead	91,519	—	33	27	—	2	—	—	1	—	—	63	9·0	—	—	—	1	—	—	—	1	0·1	72	10·3
St. Pancras	228,178	—	85	41	—	2	—	—	9	1	—	138	7·9	—	—	1	2	2	—	7	12	0·7	212	12·1
Islington	335,907	—	138	170	—	1	—	1	8	1	—	319	12·4	—	1	2	21	—	—	5	29	1·1	351	13·6
Stoke Newington	52,984	—	32	14	—	—	—	—	2	—	—	48	11·8	—	—	—	2	—	—	—	2	0·5	49	12·1
Hackney	225,372	—	112	73	—	1	—	4	13	2	—	206	11·9	—	—	2	4	1	—	2	9	0·5	193	11·2
Central Districts:																								
Holborn	39,676	—	9	12	—	—	—	—	1	—	—	22	7·2	—	—	—	—	1	—	—	1	0·3	37	12·2
Finsbury	78,291	—	29	15	—	—	—	—	6	—	—	50	8·3	—	—	—	2	1	—	1	4	0·7	86	14·3
City of London	14,447	—	3	1	—	—	—	—	—	—	—	4	3·6	—	—	—	—	—	—	—	—	—	9	8·1
East Districts:																								
Shoreditch	102,044	—	60	31	—	2	—	1	6	—	—	100	12·8	—	—	1	3	2	—	2	8	1·0	120	15·3
Bethnal Green	114,471	—	91	39	—	—	—	2	7	1	—	140	15·9	—	—	1	—	—	—	5	6	0·7	113	12·9
Stepney	241,770	—	132	50	—	1	—	1	9	—	—	193	10·4	—	1	4	4	—	—	9	18	1·0	281	15·2
Poplar	159,766	—	112	56	—	1	—	—	6	1	—	176	14·4	—	2	1	5	1	1	3	13	1·1	166	13·5
South Districts:																								
Southwark	187,142	—	89	40	—	—	—	—	6	1	—	136	9·5	—	—	1	4	—	—	6	11	0·7	219	15·3
Bermondsey	129,189	—	86	44	—	1	—	1	3	—	—	135	13·6	—	—	2	3	—	—	1	6	0·6	143	14·4
Lambeth	293,572	—	101	54	—	—	—	2	10	—	—	167	7·4	—	—	2	5	1	—	2	10	0·4	261	11·6
Battersea	165,664	—	78	36	—	1	—	1	8	—	—	124	9·8	—	1	—	2	2	1	3	9	0·7	149	11·7
Wandsworth	346,990	—	152	87	—	2	—	1	12	1	—	235	8·8	—	—	—	6	3	—	4	13	0·5	278	10·4
Camberwell	284,712	—	114	83	—	2	—	4	10	—	—	213	9·8	—	—	2	6	2	—	3	13	0·6	240	11·0
Deptford	115,636	—	87	34	—	—	—	1	2	—	—	124	14·0	—	—	2	—	—	—	3	5	0·6	105	11·8
Greenwich	102,408	—	61	61	—	1	—	2	6	—	—	131	16·7	—	—	—	—	—	—	—	—	—	86	10·9
Lewisham	174,438	—	61	42	—	1	—	—	8	1	—	113	8·4	—	—	—	1	—	1	3	5	0·4	151	11·3
Woolwich	141,665	—	116	40	—	—	—	3	6	—	—	165	15·2	—	—	—	—	1	—	1	2	0·2	114	10·5
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Hospitals contained 4112 scarlet fever patients at the end of the month, against 5117, 5508, and 4729 at the end of the three preceding months; the weekly admissions averaged 489, against 873, 780, and 590 in the three preceding months. Diphtheria was slightly less prevalent than in the preceding month; the greatest proportional prevalence of this disease was recorded in Paddington, Fulham, Islington, Hackney, Bethnal Green, Poplar, Bermondsey, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 2284, 2604, and 2615 at the end of the three preceding months, numbered 2648 at the end of January; the weekly admissions averaged 319, against 364, 360, and 316 in the three preceding months. The prevalence of enteric fever was slightly less than in the preceding five months; of the 21 cases notified during the four weeks ended Jan. 29th, 2 belonged to each of the boroughs of Hampstead, St. Pancras, Shoreditch, Wandsworth, and Camberwell. There were 11 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 19, 16, and 15 at the end of the three preceding months; the weekly admissions averaged 3, against 4, 3, and 2 in the three preceding months. Erysipelas was proportionally most prevalent in the City of Westminster, Hackney, Finsbury, Shoreditch, Bethnal Green, and Greenwich. The 37 cases of puerperal fever included 6 in Fulham, 4 in Hackney, 4 in Camberwell, 3 in Hammersmith, and 3 in Woolwich. The 11 cases of cerebro-spinal meningitis included 2 in Fulham and 2 in Hackney; while the one case of poliomyelitis notified during the month belonged to St. Marylebone.

The mortality statistics in the table relate to the deaths of civilians actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ended Jan. 29th the deaths of 4348 London residents were registered, equal to an annual rate of 12·5 per 1000; in the three preceding months the rates had been 10·1, 13·1, and 14·2 per 1000. The death-rates ranged from 8·1 in the City of London, 10·3 in Hampstead, 10·4 in Wandsworth, 10·5 in Woolwich, 10·9 in Greenwich, and 11·0 in Camberwell, to 14·3 in Finsbury, 14·4 in Bermondsey, 15·2 in Stepney, 15·3 in Shoreditch and in Southwark, 15·8 in Kensington, and 16·3 in Chelsea. The 4348 deaths from all causes included 221 deaths which were referred to the principal infectious diseases; of these, 7 resulted from measles, 23 from scarlet fever, 94 from diphtheria, 20 from whooping-cough, 3 from enteric fever, and 74 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded in the City of London or in Greenwich. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Chelsea, Hampstead, Holborn, and Woolwich; and the highest in Paddington, Islington, Shoreditch, Stepney, and Poplar. The 7 deaths from measles were less than one-twelfth of the average number in the corresponding period of the five preceding years; of these, 2 belonged to Poplar. The 23 fatal cases of scarlet fever exceeded the average by 12; of these, 4 belonged to Stepney and 2 each to Hammersmith, Islington, Hackney, Bermondsey, Lambeth, Camberwell, and Deptford. The 94 deaths from diphtheria exceeded the average number by 21; the greatest proportional mortality from this disease occurred in Paddington, Fulham, the City of Westminster, Islington, Stoke Newington, Shoreditch, and Poplar. The 20 fatal cases of whooping-cough were less than a third of the average; of these, 3 belonged to Wandsworth and 2 each to St. Pancras, Shoreditch, Battersea, and Camberwell. Three deaths from enteric fever were registered during the month, against an average of 6. The 74 fatal cases of infantile diarrhœa were three in excess of the average number; the greatest proportional mortality from this disease occurred in Paddington, St. Pancras, Bethnal Green, Stepney, Southwark, and Deptford. In conclusion, it may be stated that the aggregate mortality in London during January from these principal infectious diseases was 31 per cent. below the average in the corresponding period of the five preceding years.

SUSSEX EYE HOSPITAL.—The Sussex Eye Hospital has now adopted the principle of paying patients. During the last year 249 in-patients were attended as compared with 244 in the previous year; the out-patients numbered 3163 against 2572 (attendances 8501); 209 operations were performed against 138; and the casualties attended were 653 against 394. There was a loss on the year's working of £800.

Correspondence.

"Audi alteram partem."

REFERRED PAIN.

THE VISCERO-SENSORY REFLEX IN ABDOMINAL DISEASE.

To the Editor of THE LANCET.

SIR,—I have read with much interest the letter from Dr. A. Murdoch published in your issue of Feb. 5th, in which he criticises the conclusions of your leading article on the subject of Referred Pain in the issue of Jan. 22nd. Sir James Mackenzie and Mr. David Ligat are together responsible for an admirable attempt to simplify all abdominal diagnosis by the discovery of definite areas of hyperalgesia of the skin and subcutaneous tissues of the abdominal wall due primarily to lesions of intra-abdominal organs. It is attractive, it is ingenious, in their hands it may be correct, but does it work out in general clinical experience? My own observations agree with those of Dr. A. F. Hurst, who has doubts as to the reliability of this test.

For a number of years before reading Mr. Ligat's Hunterian lecture I was in the habit of examining all acute abdominal cases by the method of light pin-prick. Then I added his method of pinching up the skin and raising it from the deep fascia, because he suggested that fallacies arose from the methods of observation adopted. My results were just the same, and I found that abdominal cutaneous hyperalgesia, as a clinical sign, was often of value in deciding between the perforation of a gastric as compared with a duodenal ulcer. The former caused hyperalgesia to the left, and the latter to the right, of the middle line. In addition to this, such hyperalgesia was almost invariably present over the appendix area in cases with an acutely inflamed, distended, but non-perforated appendix.

In the case of chronic diseases I have only found this sign to be of value in the presence of distension of the diseased hollow organs, and I believe that in regarding distension as the prime cause of abdominal viscero-sensory reflexes I am in accord with Dr. Hurst and other observers. The clinical value of the viscero-motor reflex is fully established, and its presence in duodenal ulcer is of the highest importance.

To explain the existence of the viscero-sensory reflex Sir James Mackenzie postulates the ascension of stimuli from such lesions as ulcers of the stomach and the diffusion of these stimuli amongst the centres of the cord, and this does not tax one's imagination severely, but if it does not work out in clinical experience one may question its correctness. In fact, it is apparently too good to be true, for it would reduce abdominal diagnosis to a childishly simple process of pinching the abdominal wall. When the patient flinched the clinician would only have to look at the chart, as published by Ligat, and the organ diseased would be revealed.

One of the worst fallacies of Ligat's observations, according to my own experience, is the statement that no matter what the anatomical position of the appendix cutaneous hyperalgesia when present is found in the typical area of the right iliac fossa. Such has not been the case with my patients, and several times I have found this cutaneous reflex where the appendix was abnormally placed, but always it has been over the situation of this organ, as revealed by subsequent abdominal section. Mr. Ligat, I believe, in his Hunterian lecture, claimed success for this auxiliary method of diagnosis in a very large proportion of chronic abdominal conditions, but stated that in the acute abdomen its value was apt to be interfered with by the co-existence of peritonitis. Others have considered it of greater value in acute abdominal disease, and I have added above my observations with reference to distension. Distension of a hollow viscus causes traction on the mesenteries which contain its sensory nerves, and thus, I believe, reflexes may be initiated.

As to the statement in Dr. Murdoch's letter that the absence of the sign means nothing, but its presence, even if only noted once, makes all the difference to the diagnosis, this is contrary to our scientific methods of assessing the value of clinical observations. Negatives are surely of the same relative value as positives.

I am, Sir, yours faithfully,

Devonshire-place, W., Feb. 9th, 1921. JOSEPH E. ADAMS.

PS.—This was written before I had read the letter from Dr. J. A. Ryle in your issue of Feb. 12th, but it will be seen how closely we are in clinical agreement.

To the Editor of THE LANCET.

SIR,—In regard to this subject: firstly, do we all mean the same thing when we talk of superficial hyperalgesia? I think not. Some of us mean a definite hyperalgesic area of the skin itself, gentle stroking of which causes pain. That this condition occurs is undoubted, but that it is a rarity is also undoubted. If Dr. J. A. Ryle (Feb. 12th) is referring to this phenomenon when he says that "the superficial hyperæsthesia, which constitutes the reflex, is only present during the presence of pain or for a limited period thereafter," I agree with him and will go further and say that it is very seldom present even then. On the other hand, others of us, when we talk of a hyperalgesic area of the abdominal wall refer to an area of skin *with its underlying subcutaneous tissue;* to test this reflex the skin and subcutaneous tissue must be picked up and pressed between the finger and thumb. In my own experience this functional area is hyperalgesic to pinch in the majority of visceral lesions, excluding those of the large gut, and is of great value in arriving at an exact diagnosis.

If this is the superficial hyperæsthesia which Dr. Ryle refers to I entirely disagree with him when he says that it can only be demonstrated during the presence of pain or for a limited period thereafter. May I quote just one case out of many in support of this?—

A young medical man whom I knew, acting as house surgeon in a London hospital, was a thorough sceptic in regard to the clinical value of the functional area reflex. He joined up during the war. Some time after his discharge he called on me, and he mentioned that about six months previously he had had a sharp attack of appendicitis, but had not had his appendix removed as the conditions at the time were unfavourable. Asked if he had had it out after leaving the army, he said: "No; as I haven't had the slightest pain or discomfort for months, I don't think it is going to worry me again." I asked him to allow me to examine his abdominal reflexes. He laughed, but said I might. I picked up the skin and subcutaneous tissue in the left hypochondriac region and pressed it firmly. He smiled. I did exactly the same to his appendix functional area. He cried out with pain. Two days after his late chief removed a red, swollen appendix.

In my experience the test thus applied evokes the reflex so constantly in visceral lesions that it is a matter for surprise when one fails to find it. I have little doubt but that this reflex could have been elicited in seven or eight of the ten cases which Dr. A. F. Hurst has mentioned, but I should have been surprised had he found the purely cutaneous reflex in any of them, as I think its incidence in such cases (presumably cases of chronic gastric ulcer) is nearer 1 per cent. than 10.

I am, Sir, yours faithfully,

D. LIGAT.

Devonshire-street, Portland-place, W., Feb. 14th, 1921.

PSEUDO-COXALGIA.

To the Editor of THE LANCET.

SIR,—Mr. H. A. T. Fairbank has performed important service in directing attention in THE LANCET (Jan. 1st) to the condition called, amongst other names, "Pseudo-coxalgia," and outlining the differential diagnosis between it and tuberculous disease of the hip-joint. It is remarkable that while well recognised on the continent and in America, it has attracted little attention in this country, and is not diagnosed by the majority of surgeons and practitioners, but confused with tuberculous arthritis of the hip.

In the X ray room of the Treloar Cripples' Hospital at Alton I always have a skiagram illustrating the

condition on view, and have been struck by the rarity with which the disease is recognised by English medical colleagues, while it is almost invariably immediately diagnosed by medical visitors from abroad. The condition is undoubtedly much commoner than might be supposed, and it may be of interest to call attention to its incidence by giving the numbers of cases admitted to Alton during the years 1918, 1919, 1920:—

Year.	No. of cases of alleged tuberculous disease of hip.	Pseudo-coxalgia.	Percentage.
1918	67	3	4·4
1919	95	3	3·1
1920	89	6	6·7
—	251	12	4·8

The diagnosis in each case was confirmed by X ray examination. In every case the patient was sent in as suffering from tuberculous disease of the hip-joint, and the majority of cases were transferred from other hospitals.

It may be assumed that these cases are: (1) frequently incorrectly diagnosed; and (2) that the relative incidence is greater than in the figures obtainable from Alton. The second assumption I base on the following grounds. In the majority of cases of tuberculous arthritis sent to Alton the disease is acute, cases which rapidly improve with domiciliary or general hospital treatment rarely reach us, and in many cases application for admission is withdrawn before orders for admission are sent if the patient is not found to require further institutional treatment. It may also, I think, be a reasonable inference to make that no inconsiderable proportion of patients with alleged tuberculous disease of the hip-joint who rapidly improve under treatment or without treatment are in reality suffering from pseudo-coxalgia, and that many patients whose mysteriously rapid recovery has puzzled their medical attendants belong to this group. There remains, however, a residuum of patients with pseudo-coxalgia in whom the condition is acute and continues so for some months with considerable muscular spasm, and where clinical diagnosis from tuberculous disease of the hip-joint may be difficult, though radiographic examination will always afford certain differentiation. For these, recumbency and extension of the leg on the affected side with attempted gradual abduction is the treatment which I have found most efficacious, and I continue such treatment until the sign of activity in tuberculous disease of the hip-joint, which I have already described, is no longer present.[1] Finally, recognising that damage has been done to the head of the femur, I, with Mr. Fairbank, do not consider it wise to allow the patient to walk at first without removing pressure from the hip-joint on the affected side, though in place of the calliper splint he advocates I usually substitute the splint here described, which I have also often found useful in the ambulatory treatment of tuberculous disease of the hip-joint when that disease is no longer acute. Essentially the splint is as follows: A flexible strip of sheet iron suitably padded passes round the pelvis below the iliac crests, but above the great trochanters, and is buckled in front. Posteriorly, two padded pieces of duralumin are fixed to the pelvic band and moulded on to the ischial tuberosities. These effectually prevent the pelvic band from being displaced upwards. Finally, from the posterior part of the pelvic band immediately behind the great trochanter and extending vertically downwards is an extensible and adjustable duralumin rod, expanding outwards to firmly grip the femoral condyles of the affected limb. The weight of the body is thus taken off the hip-joint on the affected side and transmitted via the ischial tuberosity. This apparatus is simple and efficacious.

In your issue of Jan. 8th you again refer to the condition in an annotation under the heading "Quiet Hip Disease." In the present state of our knowledge I confess I cannot as yet agree with the views on the ætiology of the condition therein ascribed to Dr. Sundt. Sundt and Legg both consider that trauma is the cause and that the condition is not due to infection. Clinical considerations and X ray findings, to my mind, do not compel such a view, and I cannot but think that trauma plays no greater a part in pseudo-coxalgia than it does in tuberculosis of the hip-joint. In further support of this statement I would record that many of my patients have been cachectic and appeared to be suffering from some toxæmia. I do not know what the causal agent can be, but it may not be without some significance that in three out of my last 30 cases, the notes of which I have looked up, the Wassermann test was positive. Of these 30 cases (22 hospital and eight private), when treatment was sought at Alton or I was consulted privately, the average age was 8 years, the youngest patient was aged 4 years, the oldest 12 years. The average duration of symptoms before I saw the patient was 13 months, the shortest one month, the longest four years. In 15 cases the right hip was affected, in 13 cases the left, and in two cases both hips. Five of these patients were girls, 25 were boys. This latter observation might be considered to favour the traumatic theory of origin. Incidentally, "flat-headed femur," the most expressive name I have heard given to the condition, hails from America.

With other observers, I would agree that the condition always progresses towards recovery. As far as I am aware, no directly fatal case has ever been recorded, nor is permanent disability, other than slight shortening and limitation of abduction, to be anticipated. Nevertheless, in a few cases the condition may remain acute and be associated with pain, tenderness, and muscular spasm, for some months, and call for recumbent treatment as already outlined. I have two such cases under my care at the moment. In one, a boy, tuberculous disease of the hip-joint was diagnosed two and a half years before admission to Alton. He was treated at two separate hospitals, from both of which he was discharged as cured. At his third relapse he was sent to Alton. On admission he was markedly cachectic, and his general appearance was consistent with an active case of tuberculous disease of the hip-joint. The affected limb was slightly flexed, but further flexion to a right angle was possible, though painful, abduction and rotation of the limb very limited. The muscular spasm was relieved by extension and the limb straightened, but ambulatory treatment was accompanied by return of the symptoms. The patient is now at ease in a plaster spica, but remains cachectic. The other active case now under treatment was similarly admitted with symptoms of acute disease and similar limitation of movement and was also markedly cachectic. Shortly after admission she developed acute abdominal pain simulating appendicitis, which was in due course relieved without operative interference. This was probably not secondary to the pseudo-coxalgia. She is still being treated recumbently and with extension, the condition is still active, but less acute, and she has less cachexia.

The further contribution by Dr. H. B. Roderick on this interesting condition in THE LANCET (Jan. 29th) is a valuable one. Dr. Roderick's argument that the disease may be caused by circulatory disturbance secondary to trauma is a well-reasoned and weighty one. He, however, has laid little stress on changes which radiography shows take place in the femoral neck, and does not explain the apparent shortening and marked thickening of the neck of the femur often observed. On my last admission day, Jan. 27th, I took in at Alton 10 cases of alleged tuberculous disease of the hip-joint. Of these, two have proved to be cases of Legg's disease. The first, a boy aged 8 years, was admitted with suspected tuberculous disease of the left hip-joint. He proves to be a case of double pseudo-coxalgia. The second, a girl aged 13 years, has had symptoms suggestive of tuberculous disease of the right hip for the last nine months, and has also been treated as tuberculous.

I am, Sir, yours faithfully,

Harley-street, W., Feb. 11th, 1921. HENRY J. GAUVAIN.

[1] A Sign of Pathological Activity in Tuberculous Disease of the Hip-Joint. H. J. Gauvain, THE LANCET, Nov. 16th, 1918.

DANGEROUS DRUGS ACT, 1920.

To the Editor of THE LANCET.

SIR,—The Medical Benefit Subcommittee of the Insurance Committee for the Borough of Brighton have had before them, and have very carefully considered, the provisions of the draft Regulations proposed to be issued by the Secretary of State for Home Affairs under the above Act. As a result of this consideration the Subcommittee passed the following resolutions:—

(*a*) "That the Secretary of State for Home Affairs be informed that the procedure which it is required in compliance with the proposed Regulations, that insurance practitioners should adopt will prove, under the unnecessary official interference with everyday practice, so irksome to practitioners, that it will be detrimental to the interests of the insured person, inasmuch as the consequence will be, in many cases, to deprive the insured person of the drug which may be necessary and which would otherwise be given, and further, if such drug is prescribed, its required advertisement on the bottle or package will have a harmful effect on the patient in many cases."

(*b*) "That the insurance practitioner should be allowed, as heretofore, every latitude in determining the drugs considered most desirable for his insurance patient without having to disclose to lay inspecting officials professional matters and should be responsible to the Minister of Health alone for his actions in this direction."

In the discussion which took place the main points which were emphasised are as follows:—

1. Article 8 (8) of the terms of service for insurance practitioners stipulates:—

"A practitioner is required to supply to a patient where requisite drugs and appliances, which are necessarily or ordinarily administered by a practitioner in person, or are needed for immediate administration or application, or needed for use before a supply can conveniently be obtained otherwise under the Regulations."

It would appear from the rather vague terms of the draft Regulations, that on every occasion upon which an insurance practitioner is under the necessity of complying with the obligations undertaken as a consequence of the foregoing article he must make, or cause to be made, in a book kept for the purpose, specific and detailed, and, indeed, somewhat laboured entries, if the particular drug comes within the scope of these proposed Regulations. It is strongly felt that this would be detrimental to the interests of insured persons, inasmuch as the practitioner, rather than comply with the irksome necessary clerical procedure, may refrain from giving the necessary drug. I am aware that Sir Edward Troup, Permanent Under Secretary at the Home Office, in a letter which appeared in the *Times* on Feb. 9th, wrote as follows:—

"In several important respects the draft Regulations have been misunderstood. It has been suggested, for instance, that a doctor is required on each occasion on which he gives a hypodermic injection of morphia or otherwise administers any of the drugs to enter the fact in a book. This is not so. The Regulations require certain records to be kept in cases where drugs are supplied, and these apply to doctors who supply medicines to their patients, as well as to chemists who supply them on a doctor's prescription. But there is no requirement that a record has to be kept of a personal administration of the drugs by a doctor."

If Sir Edward Troup's interpretation on this point is the correct one, then it is respectfully submitted that the draft Regulations should be so amended as to make the matter quite clear.

2. Provided an insurance practitioner has occasion to prescribe medicines containing an amount beyond the statutory limit of any of the drugs set forth in the proposed Regulations then the fact must be advertised on the bottle or package containing such drugs. Indeed, the Article defining the "application" of the Regulations in connexion with morphine, cocaine, ecgonine, and diamorphine, when read in conjunction with Article (8) of the Regulations, is rather confusing. However, it is suggested that a bottle or package which loudly proclaims to the insured person the fact that it contains a certain percentage of a dangerous drug is not conducive to that serene frame of mind which in the interests of the patient himself his medical attendant would wish him to cultivate.

It is hoped that your influential paper will support the views above expressed, and make every endeavour to get the proposed Regulations so amended as to entirely safeguard the interests of the country's insured population.—I am, Sir, yours faithfully,

JNO. CAMPBELL,
Acting Clerk to the Brighton Insurance Committee.

Brighton, Feb. 11th, 1921.

PROPHYLAXIS AND VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—Mr. Kenneth M. Walker, supposing that "it is only over the question of prophylaxis that the split has arisen" between the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Disease in your issue of Feb. 5th, says:—

"...I put forward a suggestion that has already been made. Is it asking too much that members of the two societies should arrange to meet? Surely it is better that differences of opinion should be amicably discussed in a meeting of medical men rather than be made the subject of a bitter and somewhat tedious correspondence in the press."

I fear, however, that more than medical men are involved in this matter and that more separates the two societies than the mere question of prophylaxis. Very grave accusations have been made. The S.P.V.D. is pressing for a public inquiry into the past on the grounds that the truth has been suppressed both during and since the war, that the Ministry of Health itself has issued misleading statistics with comments equally misleading, and that the careers of public officials have depended on considerations other than efficient performance of duty. I need not expatiate on all this; I have dealt with it elsewhere; but, obviously, if these things are believed, those who credit them can feel no safety about the future until there has been an authoritative inquiry into the past. If the N.C.C.V.D. will join the S.P.V.D. in pressing for such an independent inquiry, I feel sure that all differences, if not of opinion, at least of policy, will be eliminated.

May I thank your reviewer for his most kind and indulgent review of my book? But will he please forgive me just one comment? He writes:

"In conclusion, we hope that when the second edition of this work appears its author will see his way to eliminate certain personal though anonymous references, which, in lack of taste, afford a striking contrast to an otherwise powerfully written and valuable volume."

But if the statements I have made be true, how is it possible to avoid these personal references? Events do not happen of themselves. Even the reviewer, when alluding to the Inter-Departmental Committee, makes just such personal references.

I am, Sir, yours faithfully,

Southsea, Feb. 10th, 1921. G. ARCHDALL REID.

To the Editor of THE LANCET.

SIR,—My Executive Committee, at their meeting on Feb. 10th, requested me to inform your readers that Mr. Kenneth Walker's statements in his letter published in your issue of Feb. 5th, regarding the policy of the Society for the Prevention of Venereal Disease, were incorrect, and evidently based on a misapprehension of the origin and scope of our society. This society was founded solely to fill in the gap in the propaganda of the National Council for Combating Venereal Diseases left by their opposition to instruction of the public in the prevention of infection by means of immediate self-disinfection. My society, while freely acknowledging that immediate self-disinfection is only one of many methods for diminishing venereal disease, believe that this method is an extremely important and valuable one, and our propaganda is devoted solely to bringing this method before the public, not because we are in any way whatever antagonistic to other methods, but because this method was not only neglected, but actively opposed by the N.C.C.V.D. Our work is not in opposition to but complementary to that of the National Council.

In order to obviate overlapping we confine our work to giving publicity to the one method not included in the useful and widespread propaganda of the N.C.C.V.D. The suggestion that we "regard it [i.e., immediate self-disinfection] as the single measure that will cure our ills" is therefore founded on ignorance of our published statements. Again, we have times without number pointed out that we do not advocate the packet system, and in our letter published in the *Times* of Oct. 13th, 1919, which defined our policy, we stated:—

"We decline to accept the description of our policy as the issue of prophylactic packets to the civilian community in the way in which they were issued to H.M. Forces. No suggestion has yet

been made by our committee as to the methods or means by which the public may obtain the necessary disinfecting material, the fact that such materials are easily obtained at any chemist being in our opinion quite sufficient. The aim of the committee is solely the instruction of the public."

Mr. Walker has summed up our wishes in his sentence, "let each of the societies work along the line it has chosen." My society would welcome the teachers of moral prevention as allies working along another line towards the same goal, if they on their part would accept the alliance of the teachers of medical prevention and not waste valuable energy in opposition that is not only unnecessary but also hopeless as long as disinfectants are acknowledged to disinfect. As regards Mr. Walker's suggested meeting between the two societies, official correspondence between the presidents of the two societies with this object occurred not long after the foundation of our society in 1919. My society stated their willingness to meet the National Council in conference if the National Council would accept and endorse the principles and practice of immediate self-disinfection as one of the valuable methods of preventing venereal infection. This the National Council were unable to do, and therefore the conference fell through. Our offer to meet the National Council on these grounds has never been withdrawn.—I am, Sir, yours faithfully,

H. WANSEY BAYLY,
Honorary Secretary, Society for the Prevention of Venereal Disease.

145, Harley-street, W., Feb. 12th, 1921.

CONGENITAL SYPHILIS AMONG THE NEWLY BORN.

To the Editor of THE LANCET.

SIR,—In your issue of Feb. 12th Dr. S. M. Ross and Dr. A. F. Wright, in an article under this heading, seem to quote me in support of their statement that an estimate of the amount of congenital syphilis among the newly born, based upon Wassermann reactions upon the umbilical cord serum, will be lower than is actually the case. This is the exact opposite of the impression I wished to convey in the paper they referred to. I showed that a positive Wassermann reaction at birth in most cases merely indicated that the mother had a positive reaction, which passed passively into the infant. If the infant was tested a short time after birth it was found to have a negative reaction. Thus a test of the umbilical cord serum cannot be taken as an indication of syphilis in the infant and estimates of incidence based upon such tests will be *much too high*.

Since my paper was published in 1915 I have seen this umbilical cord reaction quoted as evidence of the ravages of syphilis, and, further, such "syphilitic" infants have been "cured" with remarkable facility with salvarsan. It has always seemed to me that this test introduces a gross error into the work of infant welfare organisations so far as syphilis is concerned. No one can take exception to the conclusions of the present authors, but it is to be hoped that orators will not quote them as saying that 3·5 per cent. of infants are syphilitic.—I am, Sir, yours faithfully,

London Hospital, E., Feb. 11th, 1921. P. FILDES.

THE INDICATIONS FOR REMOVAL OF TONSILS.

To the Editor of THE LANCET.

SIR,—With reference to recent correspondence in THE LANCET on this subject, I am of opinion, after considerable experience, that the following conclusions are justified: 1. That in children practically all tonsils can be enucleated readily and easily with the guillotine. 2. That in adults they are better removed by a dissection operation. I personally use a McKenzie separator. Provided sufficient care is taken to hit the capsule the operation is easy. But in both cases a very great deal depends upon the skill of the anæsthetist. The latter should not only be able to control the patient's head, but he should know his operator's methods well enough as to reciprocate him.

I am, Sir, yours faithfully,

MACLEOD YEARSLEY.

Welbeck-street, Cavendish-square, W., Feb. 15th, 1921.

THE OPERATIVE TREATMENT OF PROLAPSE.

To the Editor of THE LANCET.

SIR,—I am surprised to find from Mr. A. H. Burgess's letter in THE LANCET last week that he is still using paraffin wax injections for prolapse. At one time the method was popular, but, as there were so many bad results from it, I thought it had been entirely discarded. I have never used it myself, not liking the idea of introducing a foreign mass into the pelvis, which cannot be removed. But I have seen the secondary results in quite a number of cases, and these included large pelvic abscesses, often months after the injection of the paraffin, and one of the worst tunnel strictures I ever saw. The stricture case proved to be hopeless, as the mass of paraffin wax prohibited all efforts to dilate the stricture, and the patient had to have a colostomy performed. The great objection to the wax treatment is that if anything goes wrong the mass cannot be removed.

I cannot understand Mr. Burgess's argument about primary union, as, surely, with primary union no adhesions are formed. My reason for using healing by granulation in these cases is that firm adhesions between the rectal and the pelvic walls are produced—the condition which is required to hold up the prolapse; stitching the rectum to the sacrum and pelvic wall is not possible, and this method has proved a very satisfactory alternative. If the surgeon is for some reason unable to stitch up a hernial ring, or otherwise to close the opening, he will find that leaving the wound to close by granulation is a satisfactory substitute, although, of course, inferior to stitching up the parts. All I claim is that where, as in the case of prolapse, stitching is useless, the method I employ is a very satisfactory substitute—and the value of an operation depends upon the results obtained. I have treated 32 cases by this method, with only one complete failure. I am surprised that Mr. Burgess has had no failures after paraffin wax injections, and should like to know his figures.—I am, Sir, yours faithfully,

J. P. LOCKHART-MUMMERY, F.R.C.S.

London, Feb. 15th, 1921.

THE DEVELOPMENT OF STUMPS.

To the Editor of THE LANCET.

SIR,—Many surgeons of the limb-fitting centres of the United Kingdom find, after performing a very successful amputation or re-amputation of a limb, that their patients, on being fitted with artificial limbs, fail utterly to carry them, either through muscular weakness, awkwardness, or shrinkage of the stump. The surgeon naturally turns to massage and stump exercises for a remedy. These exercises are usually carried out against resistance, and to a certain extent do some good, but it is necessary to call to one's aid the brain of the patient. I make a practice of asking the patient to concentrate his mind on the foot or hand, as the case may be, of the limb he has lost. He at first finds this mental concentration hard to acquire, but once it is established he can contract muscles at the end of his stump which would be impossible without mentally attaching to his limb the distal member which has been amputated. Take, for example, a below-the-knee amputation, upper third. If the patient is asked to extend his leg with the toes pointing to the ground, both vasti will be thrown into a far greater state of contraction than that obtained by the present faulty system of exercises. Now in this same amputation, if the patient is asked to flex and extend the foot at the ankle-joint, and also evert and invert the foot, the end of the stump will be seen dimpling owing to the action of the muscles brought into play by movements at the ankle-joint.

The advantage of this system of exercises will be quickly seen in the tone of the muscles and nourishment of the stump. In educating the patient in this remembrance of the distal end of the amputated limb, the tone and development of the muscles are retained. The strength of the voluntary muscles is fully doubled. The artificial limb becomes animate and equilibrium is established.—I am, Sir, yours faithfully,

M. DOCKRELL, L.R.C.P. & S. Irel.
Special Surgical Hospital, Blackrock, co. Dublin.

Feb. 14th, 1921. Ministry of Pensions.

Medical News.

UNIVERSITY OF CAMBRIDGE.—In accordance with the decision of the Senate on Jan. 28th the General Board of Studies have appointed Dr. C. S. Myers, F.R.S., as Reader in Experimental Psychology for five years from Oct. 1st last. The University Lectureship in Experimental Psychology has been held by Dr. Myers since 1907.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary Council meeting was held on Feb. 10th, with Sir Anthony Bowlby in the chair.—A report was read from the Court of Examiners respecting candidates found qualified for the diploma of Member, and diplomas were granted to 84 candidates mentioned in the report.—A report was read from the secretary of the Conjoint Examining Board respecting candidates found qualified for the diploma in Ophthalmic Medicine and Surgery of the two Colleges, and diplomas were granted jointly with the Royal College of Physicians to seven candidates mentioned in the report.—Dr. W. S. A. Griffith was reappointed the representative of the College on the Central Midwives Board for one year from March 31st, 1921, and a vote of thanks was passed to him for his services on the Board during the past year.—A letter was read from the Registrar of the General Medical Council calling attention to the fact that on and after Jan. 1st, 1923, all those who desire to be registered as medical or dental students will have to produce evidence that they have attained the age of 17 years, and that the minimum standard of general education required will be that of university matriculation or entrance examination; that before registration as a medical student every applicant will be required to have passed in addition to the examination in general education, an examination in elementary physics and elementary chemistry conducted or recognised by one of the licensing bodies, and that a student who has diligently attended an approved course of instruction in elementary biology at a secondary school or other teaching institution recognised by a licensing body may be admitted to the professional examination in elementary biology immediately after his registration as a student. The matter was referred to the Dental Board and the Committee of Management of the Conjoint Board.—A memorial was read from the Section of Otology of the Royal Society of Medicine, asking the Royal Colleges to grant a diploma in the science and art of otology. The matter was referred to the Committee of Management of the Conjoint Board.—A letter was read from the Voluntary Hospital Committee appointed by the Minister of Health to inquire into the financial position of the voluntary hospitals and to make recommendations, asking whether the Royal College of Surgeons desires to present any evidence to the Committee. The President, with Mr. H. J. Waring, Mr. Raymond Johnson, and Sir Cuthbert Wallace were appointed to consider the matter.—Sir Charles Ballance reported to the Council on his recent visit to Egypt for the purpose of inspecting the Cairo School of Medicine.—The President reported that a meeting of the Fellows would be held at the College on Thursday, July 7th next, for the election of four Fellows into the Council in the vacancies occasioned by the retirement in rotation of Sir George H. Makins, Mr. J. Ernest Lane, Mr. H. J. Waring, and Mr. F. F. Burghard; that notice of the meeting would be given to Fellows by advertisement and by circular on March 11th; that March 21st would be the last day for the nomination of candidates; and that a voting paper would be sent on April 5th to every Fellow of the College whose address is registered at the College.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of Comitia of the Royal College of Physicians on Feb. 3rd and of the Council of the Royal College of Surgeons on Feb. 10th diplomas of L.R.C.P. and M.R.C.S. were conferred upon 84 candidates (including 16 women) who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the by-laws of the Colleges. The following are the names and medical schools of the successful candidates:—

Doris Elizabeth Alcock, Royal Free Hosp.; H. E. Alexander, Pennsylvania University; G. W. Almeyda, London Hosp.; C. H. Andrewes and H. N. Andrewes, St Bart.'s Hosp.; Kathleen Ardell, Royal Free Hosp.; O. A. Baker, W. E. Barnes, and H. E. Beasley, Univ. Coll. Hosp.; *Evelyn Frances Bebbington, Liverpool University; Margaret Gladys Best, St. Mary's Hosp.; L. M. Billingham, St. Bart.'s Hosp.; I. Blain, Manchester University; C. H. Bracewell and J. L. M. Brown, St. Bart.'s Hosp.; R. Buddle, Otago University; C. L. C. Burns, St. Thomas's Hosp.; A. Y. Cantin, Paris and London Hosp.; Dorothy Spencer Chamberlain, King's Coll. Hosp.; L. C. F. Chevens, St. Thomas's Hosp.; F. Christian, Univ. Coll. Hosp.; Ivy Collier, St. Mary's Hosp.; F. P. de Caux, St. Bart.'s Hosp.; A. H. G. Down, Univ. Coll. Hosp.; A. G. Duncan, London Hosp.; T. A. Eccles, St. Bart.'s Hosp.; R. T. Edwards, London Hosp.; H. Franklyn, Cambridge University and St. Bart.'s Hosp.; O. P. Gallegos, Charing Cross Hosp.; G. I. Griffiths, Liverpool University; W. R. W. Haight, Toronto University; H. W. Hammond, St. Bart.'s Hosp.; Katharine May Harbord, Royal Free Hosp.; H. J. B. Hendley, St. Bart.'s Hosp.; T. B. Hodgson, Oxford University and St. Bart.'s Hosp.; S. H. G. Humfrey, Cambridge University and St. Thomas's Hosp.; A. Y. Ibrahim, St. Thomas's Hosp.; J. G. Johnstone, Oxford University and St. Bart.'s Hosp.; H. C. V. Joy, London Hosp.; A. N. Kingsbury, Middlesex Hosp.; F. G. Latham, Liverpool University; Anna Gwenllian Mary Lewis, Univ. Coll. Hosp.; C. J. Lewis, Birmingham University; C. A. Lindup, Univ. Coll. Hosp.; Kathleen Maria Boyce McArthur, Cambridge and St. Mary's Hosp.; H. McKenzie, London Hosp.; Elizabeth Matthai, Royal Free Hosp.; A. Mikhail, Guy's Hosp.; G. S. Mitchell, Westminster Hosp.; W. P. Newman, St. Thomas's Hosp.; Helen O'Brien, Royal Free and St. Mary's Hosps.; F. R. Oliver and S. Orchard, Cambridge University and St. Bart.'s Hosp.; T. L. Ormerod, St. Bart.'s Hosp.; Tresilla Laura Pires, Charing Cross Hosp.; Olive Gwendoline Potter, London Hosp.; C. S. C. Prance, St. Bart.'s Hosp.; I. M. Rattray, St. George's Hosp.; P. L. Richardson, Guy's Hosp.; O. A. L. Roberts, St. Mary's Hosp.; A. R. Roushdy, Charing Cross Hosp.; G. R. A. de M. Rudolf, King's Coll. Hosp.; H. L. Sackett, St. Bart.'s Hosp.; A. R. Sami, St. Thomas's Hosp.; Maud Sanderson, St. Mary's Hosp.; R. G. V. Shaw, Sydney University and London Hosp.; N. L. Sheorey, Bombay University and London Hosp.; E. A. Sparks, St. Thomas's Hosp.; H. Spibey, Univ. Coll. Hosp.; J. A. Stephens, Leeds University; R. N. L. Symes, St. Thomas's Hosp.; A. H. Talaat, Middlesex Hosp.; K. H. Tallerman, Cambridge University and St. Thomas's Hosp.; H. E. Thomas, Univ. Coll. Hosp.; J. S. Thomas, London Hosp.; N. G. Thomson, Cambridge University and St. Bart.'s Hosp.; H. M. Toop, London Hosp.; G. D. C. Tracy, Cambridge University and St. Thomas's Hosp.; T. W. Turner, Guy's Hosp.; Madeline Hilda Jane Umpleby, St. George's Hosp.; Gladys Mary Wauhope, St. Andrews University and London Hosp.; May Grant Williams, Royal Free Hosp.; H. N. Witham, St. Thomas's Hosp.; and F. W. Zaglama, Manchester University.

* Diploma of M.R.C.S. alone conferred.

ROYAL INSTITUTION OF GREAT BRITAIN.—On Tuesday, Feb. 22nd, at 3 P.M., Professor Arthur Keith, F.R.S., will give the first of four lectures on Darwin's Theory of Man's Origin (in the Light of Present-day Evidence).

SOCIETY OF M.O.H.: SCHOOL MEDICAL SERVICE GROUP.—A meeting of the Group Council will be held to-day, Saturday, at 11 A.M., and of the Group at 11.30 A.M. at 1, Upper Montague-street, Russell-square, London, W.C. The subjects for discussion are (1) Uniformity of Medical Inspection Cards and Schedules and (2) Superannuation and Security of Tenure. Members of the school medical service who are not members of the society will be welcome as visitors. Suggestions for papers or notice of any other matter of special interest to the service will be welcomed by the honorary secretary, Dr. Armly Ashkenny, Health Department, West Bromwich.

THE HORSLEY MEMORIAL.—The executive committee of this Fund publish the following second list of subscriptions:—

	£	s.	d.
Mr. and Mrs. Edward Robinson	105	0	0
Sir F. W. Chance	20	0	0
Dr. W. S. Coleman, Mr. A. H. Burgess, Mr. C. H. Carlisle, each	10	10	0
Miss M. W. Ranken	10	0	0
Sir Berkeley Moynihan, Sir A. Pearce Gould, Dr. J. Smith Whitaker, Dr. F. J. Hopkinson, Mr. Wilfred Trotter, Miss Mary Robinson, Miss Margaret Knowles ... each	5	5	0
Mrs. Scharlieb, M.D., Mrs. Rosa Napier, Miss Emily Chaplin ... each	5	0	0
Sir Thomas Barlow, Sir Humphry D. Rolleston, Mr. Harry Platt, Dr. Thomas Wilson, Mrs. Frances Levy, Dr. Thomas W. Thomas, Dr. W. H. Rivers, Anonymous (per Dr. Collier) ... each	3	3	0
Sir William Macewen, Dr. E. Rowland Fothergill, Right Rev. Dr. Hine, Dr. May Thorne, Sir Squire Sprigge, Mrs. Henry Fawcett, Mr. J. H. Morgan, Dr. George Pernet, Professor James Sully, Dr. J. A. Macdonald, Dr. Edwin Bramwell, Mr. J. Furneaux Jordan, Mr. J. H. Bown, Professor W. D. Halliburton ... each	2	2	0
Lady Rhondda, Dr. Joyce, Dr. Wallace Henry, Professor Keith, Sister Newill, Sister Frinzeauma Low, P. Maud Webbe and A. J. Webbe, Canon J. W. Horsley, Mr. C. W. Beresford, Mrs. E. J. Dawson, Miss Juliet Simons, Dr. Herbert Jones, Dr. Harriette Chick ... each	1	1	0
Miss T. R. Murray	1	0	0
Mrs. Lindo Henry	0	10	6
Mr. George E. Abbot	0	10	0
Dutch Branch of the International League against Epilepsy (per Dr. Muskens, Amsterdam)			

The amount acknowledged in the first list (THE LANCET, Jan. 1st, p. 46) was £324 17s., and in that list "Sir Charles Harrison" should read "Sir Cecil Harrison, K.B.E." Further subscriptions may be sent to the honorary treasurers, Sir Frederick Mott, K.B.E., Maudsley Neurological Hospital, Denmark Hill, S.E. 5, and Dr. Howard Tooth, C.B., C.M.G., 34, Harley-street, W. 1, or the honorary secretaries, Sir W. Arbuthnot Lane, Bart., C.B., and Edward J. Domville, O.B.E., Shutes, Symondsbury, Bridport.

EPSOM COLLEGE.—**The Council will shortly** award "France" pensions of £30 a year to aged medical men in necessitous circumstances, as well as a St. Anne's Home Scholarship to the orphan daughter (between the ages of 9 and 12) of a medical man. Full particulars can be obtained from the secretary, Mr. J. Bernard Lamb, 49, Bedford-square, London, W.C.1.

MENTAL AFTER-CARE ASSOCIATION.—**The annual** meeting of this association for poor persons discharged convalescent or recovered from institutions for the insane will be held at Bridewell Royal Hospital, New Bridge-street, London, E.C., at 3 P.M., on Feb. 23rd, Sir Charles Wakefield in the chair.

ROYAL SOCIETY.—**The following papers will be** read at the meeting on Feb. 24th: Sir Ray Lankester, F.R.S., a Remarkable Flint Implement from Selsey Bill; Mr. E. J. Allen, D.Sc., F.R.S., Regeneration and Reproduction of the Syllid Procerastea; Mr. E. C. Grey and Mr. E. G. Young, the Enzymes of *B. coli communis*, Part II. (*a*) Anaerobic Growth followed by Anaerobic and Aerobic Fermentation, (*b*) the Effects of Aeration during the Fermentation, communicated by Professor F. G Hopkins, F.R.S.; Mr. A. E. Everest, D.Sc., and Mr. A. J. Hall, Anthocyanins and Anthocyanidins, Part IV., communicated by Professor F. Keeble, F.R.S.

DONATIONS AND BEQUESTS.—**Mr. J. T. Dorrington,** Gloucester, left £2000 for assisting poor women in the time of childbirth, £1000 to the Manchester Royal Eye Hospital, £500 to the Manchester Cancer Pavilion, and £500 to St. Mary's Hospital for Women and Children, Manchester. —Members of the Haslam and Scott families, formerly connected with the public life and industry of the town of Bolton, have given generous benefactions to the town amounting to £50,000. Of this sum £30,000 is to build a new nursing home for Bolton Infirmary, the personal gift of Mr. J. P. Haslam, who recently gave his residence for a maternity home.

ROYAL SANITARY INSTITUTE.—**A sessional meeting** will be held on Friday, Feb. 25th, in the College of Technology, Manchester, at 7 P.M., when discussions on the following subjects will take place: the Use of Open Fires for Domestic Heating (opener Mrs. Margaret Fishenden, D.Sc.); the Present Position of Smokeless Fires (opener Captain F. S. Sinnatt); Air Pollution (opener Professor J. Radcliffe). The chair will be taken at 7 P.M. by Sir Henry Tanner, deputy chairman of council. On Saturday, Feb. 26th, at 2 P.M., a visit will be paid to Wilbraham-road, Chorlton-cum-Hardy, for inspection of the various types of houses now in course of erection on this estate. The visit will be under the direction of F. W. Platt, Esq., director of housing to the city. Those proposing to attend the meeting and the visit should notify the honorary local secretary, Professor J. Radcliffe, College of Technology, Manchester, not later than Feb. 19th. A meeting will also be held at 90, Buckingham Palace-road, London, S.W.1, on Tuesday, March 8th, at 5 P.M., when discussions will take place on the Sanitary Engineering Side of Town Planning (opener Mr. Edward Willis) and Town Planning of Built-on Areas (opener George Pepler). The chair will be taken at 5 P.M. by Professor H. R. Kenwood, chairman of council.

MEDICAL SCHOLARSHIPS FOR SERBIAN GIRLS.—A meeting was held on Feb. 10th at 28, Kensington Court by invitation of Lady Swaythling in aid of a fund to provide medical scholarships for Serbian girls. The speakers included Sir Willoughby Dickinson, Dr. Mary Scharlieb, Dr. Dickinson Berry, and Mrs. Carrington Wilde. The scholarships, which are intended as a memorial to the work of medical women in Serbia during the war, will provide the cost of maintenance and education for a medical degree at the London School of Medicine for Women and the Royal Free Hospital, and will be open to girls from any part of Jugo-Slavia, the new and enlarged Serbia. It is estimated that £4500 will be required for each scholarship, and it is hoped to be able to found two. Successful candidates will be required to undertake to return to practice in their own country. Stress was laid on the affection which had grown up during the war between the Serbians and the British workers in Serbia, on the very high esteem in which British women in general and medical women in particular were held there and on the keen desire of Serbian girls to study in England. Sir W. Dickinson emphasised the importance, in regard to the future peace of the world, of nations learning to know one another, and considered that scholarships such as these were a potent influence in this direction, especially as they influenced the young. The proceedings closed with a vote of thanks to Lady Swaythling, proposed by Mr. Gavrilovitch, the Serbo-Croat-Slovene Minister. Further information about the fund, of which Dr. Mary Scharlieb is president, can be obtained from Dr. Dickinson Berry, of 21, Wimpole-street, London, W.1, and donations should be sent to Mrs. H. Flinders Petrie at the same address.

Dr. A. F. R. Wollaston, D.S.C., F.R.G.S., has been appointed medical officer to the Mount Everest Expedition.

BRITISH INDUSTRIES FAIR, 1921.—**This fair, which** will be held at the White City, Shepherd's Bush, London, from Feb. 21st to March 4th, will have sections devoted to medical and surgical instruments and appliances, scientific and optical instruments, spectacle ware and opticians' supplies, and drugs and druggists' sundries. Fairs at the Castle Bromwich Aerodrome, Birmingham, and at the Kelvin Hall, Glasgow, will take place at the same time.

PRESENTATION TO A MEDICAL MAN.—**A silver note**-case containing £135 in notes and an album inscribed with the names of 400 subscribers has recently been presented to Dr. W. A. Aldred, of Wroxham, near Norwich, by his patients and friends. Dr. Aldred is medical officer of Frettenham district, St. Faith's Union, and has practised for 15 years in this district, where he is very popular.

ERRATUM.—**Under the heading Presentations to** Medical Men in our issue of last week (p. 353) the name of the retiring principal of Grant Medical College should have been Lieutenant-Colonel Ashton *Street*, and not Smith as printed. The portrait unveiled was that of Colonel Street, and not of General Jennings.

DANGEROUS DRUGS ACT.—**At a meeting of the** executive of the Camberwell Division of the British Medical Association the Dangerous Drugs Act was considered and the following resolution was passed:—

> "That, having fully discussed the Draft Regulations as applied to medical men, we have decided that they are so impracticable that we must decline to carry them out."

It was also resolved that a copy of the resolution be sent to the Home Secretary, the Members of Parliament for the Division, the B.M.A., and the medical press.

LONDON UNIVERSITY.—**A meeting of the Senate** was held on Feb. 16th, the Vice-Chancellor, Dr. S. Russell Wells, being in the chair. The Vice-Chancellor stated that the Prince of Wales had intimated his consent to attend the graduation dinner at the Guildhall, on May 5th, on the afternoon of which day he will have received the honorary degrees of Master of Commerce and Doctor of Science.—Miss Anne Louise McIlroy, O.B.E., M.D., Ch.B., D.Sc. (Glasgow), was appointed to the University Chair of Obstetrics and Gynæcology tenable at the London School of Medicine for Women.—Professor James Peter Hill, D.Sc. (Edin.), F.R.S., was appointed to the University Chair of Embryology tenable at University College.—The Graham Legacy Committee reported the appointment of Mr. V. R. Khanolkar, M.B., B.S., B.Sc., to the Graham Scholarship in Pathology for two years from April 1st, 1921. The value of the scholarship is £400 a year. Since October last Mr. Khanolkar has been assistant bacteriologist at University College Hospital. The proposed subject of his research is Focal Activity of the Kidneys.

CZECHO-SLOVAK MEDICAL COMMISSION.—**A luncheon** was given at the Guildhall, London, on Feb. 14th, by Alderman Sir Charles Wakefield, in honour of the Czecho-Slovak Medical Commission now visiting this country. The members of the Commission have been studying the health institutions of many cities, and are now gathering information upon the methods of food-supply in London, as well as upon our preventive health machinery. There were present the Czecho-Slovak Minister, the British Minister to Czecho-Slovakia, six medical men representing State medicine in the new country, a great number of the important officers of the Common Council, and a representative group of persons associated with sanitary progress. An excellent address was given by H.E. Dr. V. Mastny, Czecho-Slovak Minister, in response to a sympathetic introduction from Sir Charles Wakefield, and Sir George Newman, Principal Medical Officer to the Ministry of Health, warmly welcomed the representatives of State medicine in Czecho-Slovakia to the City of London, pointing out that in their new country they were face to face with essential needs. He had no doubt, he added, that the Commission had seen both in England and America much elaborate machinery and much complex organisation for the betterment of the health of the public, but his counsel to the public health officials of Czecho-Slovakia was to keep their eyes fixed on the great essentials—common cleanliness, good water-supply, decent housing, and, above all things, education, for it was only by education of the community that the lessons of public health could obtain due appreciation. Laws, he said, might be made and regulations laid down, but it was absolutely essential that behind all legislation there should lie the goodwill and the determination of the people concerned, which could only follow on their comprehension of sanitary designs. The prosperity of the medical press was proposed by Mr. W. H. Savery, late chairman of the Sanitary Committee of the Common Council, to which the Editor of THE LANCET replied.

EDUCATIONAL HEALTH AND FOOD CAMPAIGN.—At a recent meeting at the Mansion House a campaign was inaugurated to stimulate societies and individuals interested in the welfare of the people to make coördinated efforts to spread information about the laws of health and the proper choice and preparation of food. A memorial has been sent to the Minister of Health, signed by representatives of the following societies: British Medical Association, British Women's Patriotic League, Bread and Food Reform League, Church of England Temperance Society, Food Education Society, London Trades Council, National Association for the Prevention of Tuberculosis, National British Women's Temperance Association, National Health Society, People's League of Health, Public Health Committee of National Council of Women, Royal Sanitary Institute, Trades Union Congress Parliamentary Committee, Women's Imperial Health Association, and Working Men's Club and Institutes Union. Further information may be obtained from Miss May Yates, Hon. Sec., the Educational Health and Food Campaign, 37, Essex-street, London, W.C.2.

ASSOCIATION OF SCHOOL MEDICAL OFFICERS OF SCOTLAND.—A conference will be held in the Provincial Training College, Edinburgh, on April 7th, 8th, and 9th. The programme is as follows:—On April 7th, at 9.45 A.M., Dr. F. C. Shrubsall will speak on Mental Deficiency; at 12 noon Dr. Norman Walker will discuss Skin Diseases in Schools; and at 2.30 P.M. the Educationally Blind Child will be the subject of a paper by Dr. A. MacGillivray. At 3.30 P.M. there will be a Demonstration of the Methods Used in the Education of Educationally Blind Children. On April 8th, at 10 A.M., Professor Georges Dreyer will give a lecture on the Assessment of Physical Fitness, to be followed by a Demonstration of Apparatus and Methods. This session has been arranged by the Scottish Board of Health. At 2.30 P.M. Physical Education will be discussed at a joint meeting with the Scottish League of Organisers and Teachers of Physical Training. The speakers will include Dr. A. T. Mackenzie, Dr. John Jardine, Miss C. S. Ferguson, and Miss E. S. Henderson. At 3.30 P.M. a demonstration of physical training will be held. On April 9th, at 9.30 A.M., visits will be paid to special schools, school premises, &c., in Edinburgh. The attendance of medical practitioners is invited, and admission tickets, as well as any further information required, will be sent on application to the honorary secretary, Dr. John Hunter, 8, Abercromby-place, Edinburgh.

HIGHLAND ASSOCIATION OF PARISH COUNCILS.—At a meeting of the recently formed Highland Association of Parish Councils in Inverness, Lochiel in the chair, a letter was read from the Scottish Board of Health refusing its sanction to the formation of the association, in so far as it entailed expense to the poor-rates in respect of the attendance of members, &c. The Board thought that purely Highland matters might adequately be dealt with by the Highland Committee of the Scottish Association of Parish Councils. Lochiel said that he had had correspondence with Sir George McRae on the subject and had pointed out that the Scottish Association of Parish Councils was of no value whatever to the Highlands. Only 30 or 40 parishes in the Highlands belonged to this association. One of the objects of the new Highland Association was to promote economy in local administration. It was eventually agreed to advise the Highland parishes to withdraw from the Scottish Association, and to ask the Board of Health to recognise the formation of the Highland Association of Parish Councils.

HEALTH OF BIRMINGHAM.—The health statistics for 1920 are of considerable interest, and show the great advance that has been made towards a healthy corporate life. The birth-rate for the year was 27·6, about the same as in pre-war years, although during the war years the rate steadily declined, from 26·4 in 1914 to 19·4 in 1918. The death-rate was 12·6, the lowest since 1917. Ten years ago the death-rate was 13·2, and in the interval varied between this figure and 15·2. The infant mortality-rate per 1000 births was 83, as against 150 20 years ago. The improvement in the health of the people is equally well seen in studying the mortality for the specific diseases. Twenty years ago there were 500 cases of enteric fever a year. Last year only 12 were notified in spite of the return of soldiers, many of whom must be carriers; none ended fatally. Only 1 case of small-pox has been notified in 19 years. Pulmonary tuberculosis first became compulsorily notifiable in 1912, in which year the disease was responsible for a death-rate of 1·28. Last year the rate had declined to 0·93, the lowest on record, and the cases notified numbered 2610, as against 4394 in 1912. A similar improvement is also seen in other forms of tuberculosis. In 1913 there were 967 notified cases, last year only 365. The death-rate from this cause was only 0·18, about half of that for the whole of England and Wales, including rural areas. There were notified during the year 5588 cases of scarlet fever, against 2821 in the preceding year, and 1766 cases of diphtheria, against 970.

UNIVERSITY OF BIRMINGHAM.—At a recent dinner of the University Mining Society it was announced that the Doncaster Laboratory would be transferred to Birmingham and that Dr. J. S. Haldane, its director, has been made an honorary professor and honorary director of research at the University of Birmingham. The laboratory was founded in 1911 after the serious mine explosion at Doncaster. It is devoted to research work and latterly had been concerned with the question of temperature in mines and its control.

MANCHESTER'S CAMPAIGN AGAINST VENEREAL DISEASES.—The Manchester and Salford branch of the National Council for Combating Venereal Diseases, at its annual meeting on Feb. 4th, decided to call a special meeting of the branch "to discuss the prevention, prophylaxis, and combating of venereal disease, inviting to it members of the Health, Education, Watch, and Parks Committees, and heads of secondary schools, hostels, and training colleges, directors of lads' clubs, scoutmasters, and other workers among young people, together with some ministers, doctors, and social workers." The report stated that 208 lectures had been given by medical and social experts, men and women, during the past year to many different kinds of audiences, the majority of the lectures being given in works and many before branches of the Labour Party and trades-unions, teachers' associations, schools for mothers, girls' guilds, and social clubs.

MANCHESTER AND SALFORD MEDICAL CHARITIES.—In the appeal issued for increased contributions to the Hospital Sunday Fund of the Manchester and Salford Medical Charities it is stated that there is a deficit for the year in the working of the voluntary hospitals of £56,000, so that either income must be increased or expenses curtailed, or the number of patients treated reduced. These hospitals are no longer local institutions, but largely serve the whole of Lancashire, Cheshire, and North Derbyshire, and even more remote districts—last year 36,000 cases came from districts outside Manchester. The students of Manchester University on the occasion of their annual Shrove Tuesday frolics collected £655 for the Manchester hospitals.—At the annual meeting of the trustees of the Manchester Royal Infirmary an urgent appeal was made to the public to increase its income so that the closing of four or more wards may be avoided. A scheme for the provision of a nurses' home requires the expenditure of £96,250. It is anticipated that the excess of expenditure over income in the next two years will reach £80,000, and in the following year £47,000, so that in three years the adverse balance will reach a sum which will exhaust the whole of the available capital. For the two years, 1919 and 1920, the expenditure increased enormously—especially in food, drugs, salaries, wages—so that there would have been a total deficit of £68,761 but for a large donation and a non-recurring grant from the National Relief Fund and the selling of £30,808 of invested funds. To induce the right kind of women to take up nursing it was stated that shorter hours of duty and better salaries must be given to the nursing staff.

WELLCOME HISTORICAL MEDICAL MUSEUM.—A new section illustrating naval and military service during the recent war has lately been added to the Museum. Although the space which can at present be spared for the display of material is small, it is hoped in time to increase both the quantity of the latter and the extent of its accommodation. The pictorial part of the section is extremely interesting, as it contains photographs (some of which have never been reproduced) sent by correspondents to the Museum, and showing particularly clearly the means of transport of sick and wounded at sea and on many of the fronts. There are a number of original colour drawings, including artists' sketches from which were made some of the paintings now in the Naval Section at the Crystal Palace, together with studies by Raemaekers, the Matanias, and others. Among the numerous medical and surgical relics from various seats of war, none are more interesting than the captured "Ersatz" drugs and dressings. Examples are exhibited of the exquisite surgical appliances made by British women in Rome for the use of the allied armies in Italy. Representative types of crutches from British hospitals, the Neil Robertson naval stretcher, and the ingenious combination naval stretcher and cot, may here be seen; and an almost complete sequence of forms of anti-gas equipment illustrates the effort of science to keep pace with her own powers of extermination. It is hoped that private individuals who possess objects likely to enhance the value of the new section will not hesitate to loan or deposit them for exhibition, as the present collection is considered to be only the nucleus of a department of the Museum which is likely to be of great use and interest in the future. We may here add that the Museum has recently acquired a replica of the Great Mace presented to the American College of Surgeons by the consulting surgeons of the British armies. This replica, cast in copper from the original Mace, hand finished by the designer and craftsman, Mr. Omar Ramsden, and gilded, has been placed in the Hall of Statuary of the Museum.

Obituary.

WILLIAM LATTO ROBERTSON, M.C., M.B., CH.B. EDIN., F.R.C.S. EDIN., &c.,

CAPTAIN, R.A.M.C.

William Latto Robertson, who died on Jan. 24th from blood poisoning, the result of puncturing his finger while performing an operation at the Royal Infirmary, Dundee, during the previous week, was educated at the High School, Dundee, and at St. Andrews University, where he graduated M.A. In 1905 he graduated M.B., Ch.B., at Edinburgh University, in which year he also took the L.R.C.P., L.R.C.S. Edin., L.R.F.P.S. Glasg. Following qualification he held residential appointments at the Chalmers' Hospital, the Royal Infirmary, and the Royal Hospital for Sick Children, Edinburgh, and, after visiting various clinics abroad, joined Mr. D. M. Greig in his private surgical practice as assistant at Dundee in 1907. In that year he obtained the F.R.C.S. Edin. Subsequently he became assistant surgeon at Dundee Royal Infirmary and clinical tutor at St. Andrews University. On the outbreak of war Captain Robertson went with the 3rd Highland Field Ambulance to France, was mentioned in despatches on two occasions, and in 1918 was awarded the Military Cross. After acting as D.A.D.M.S. he was transferred to Italy, where he later acted as A.D.M.S., with the rank of lieutenant-colonel. On resuming practice in Dundee he was appointed full surgeon at the Royal Infirmary, and in December of last year a lecturer in clinical surgery at St. Andrews University and Dundee University College. Captain Robertson had an engaging and modest personality; his death at the age of 38 years has cut short the promise of a successful surgical career.

THE LATE DR. EDWARD BUCKELL.—**Dr. Edward** Buckell, who died at Brighton on Feb. 5th at the age of 94, had lived in retirement for many years. He qualified M.R.C.S. Eng. and L.S.A. as long ago as 1849 from University College Hospital, where he was one of those present on Dec. 21st, 1846, at the first operation performed under ether in Europe—an amputation of the leg by Robert Liston. He spent the best part of his professional life at Winchester, where he practised for 26 years, and was district medical officer to the Winchester Union. Dr. Buckell was a son of the late Mr. John Westmore Buckell, of Chichester, where members of his family are still in practice.

THE LATE DR. J. C. MCWALTER.—**The death of** Dr. J. C. McWalter in Dublin on Feb. 8th was announced in our columns last week. He was only 50 years of age, and appeared in good health, but on the evening previous to his death, as the sequel of a hurried walk of two miles, he showed signs of collapse on reaching home. Under medical attention he appeared to recover, but later his heart failed again, and death followed shortly. Dr. McWalter was a man of great energy and versatility. A medical man in busy practice, interested in all professional affairs, a member of the Corporation of Dublin, attending to his duties with scrupulous care, chairman of many committees, an indefatigable writer of letters, notes, and articles to the medical and lay papers, he yet found time to read for qualifications beyond count. Possessed of degrees in medicine, arts, or law of four universities, and diplomas from three corporations, he was also a barrister-at-law and a civil engineer. During the war he served as a captain in the R.A.M.C., most of his foreign service being in the Mediterranean area. He was High Sheriff of Dublin at the time of his sudden death.

THE LATE DR. FRANCIS WILLIAM DAVIDSON.—The death took place at Banchory on Feb. 10th of Dr. Francis W. Davidson, late of Thornton Heath, Surrey. Dr. Davidson, who was 38 years of age, was a son of the late Mr. Alex. D. Davidson, of London. He was educated at the Grammar School and University of Aberdeen, where he graduated M.B., Ch.B., in 1904. On leaving the university he held the appointments of house physician and house surgeon at the Royal Hospital, Richmond, and afterwards joined his elder brother, the late Dr. James Gellie Davidson, in practice at Thornton Heath. The brothers built up an extensive practice, assisted later by a third brother, also a graduate of Aberdeen, Dr. R. Gibson Davidson. Dr. F. W. Davidson once contributed to THE LANCET (1910, ii., 1276) an account of a remarkable case, which should have attracted more attention than it apparently did, of concurrent extra- and intra-uterine pregnancy. A ruptured ectopic gestation was diagnosed by him, and on operation two fœtuses of about two months development were found. Six months after a normal full-term child was delivered at term. Dr. Davidson joined the R.A.M.C. during the war, and served in Egypt. In December last, on account of failing health, he sold his practice and went to live in Banchory. His interests outside medicine were many—music, art, and architecture, and he was learned upon the structures of old cathedrals and churches. Dr. Davidson was unmarried, and is survived by his mother, brother, and sister.

THE LATE MR. J. D. STAPLE.—**The death occurred** suddenly on Feb. 4th, from cerebral hæmorrhage, of James Dibble Staple, M.R.C.S. Eng., L.S.A., at Lyme Regis, where he had been residing for the past five years. Mr. Staple was born at Crewkerne, being the only son of members of two old Somersetshire families. After being educated at private schools and abroad, he studied at Westminster Hospital and took the qualifications of L.S.A. in 1884 and M.R.C.S. in 1887. After holding appointments as house surgeon at Plymouth, Norwich, and Stockport, he settled in Bristol, where he resided for 30 years and acquired a very extensive practice, for 20 years being medical officer for No. 3 District and public vaccinator for the Ashley District of the Bristol Union. In 1916, owing to failing health, Mr. Staple went to Lyme Regis, where he was still able to do a small amount of medical work up to and including the day of his death. Mr. Staple was of a genial and sympathetic nature and much beloved by his patients and friends, by whom he will be greatly missed.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

J. St. B. Crosbie is granted a commission as Surgeon-Lieutenant.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. J. Grech retires on retired pay and is granted the rank of Colonel.

The undermentioned relinquish the acting rank of Lieutenant-Colonel: Capt. and Bt. Major R. E. Barnsley and Major C. R. M. Morris.

Temp. Capts. C. F. Strange (retains the rank of Captain) and F. W. H. Pilot relinquish their commissions.

SPECIAL RESERVE OF OFFICERS.

The undermentioned Captains relinquish their commissions and retain the rank of Captain: W. Buchan, V. D. Wyborn, D. Roger, E. S. Davies, A. J. Macartney, and C. B. Dyson.

TERRITORIAL FORCE.

Major W. T. Rowe to be Lieutenant-Colonel and command 3rd Northern Casualty Clearing Station.

Capt. G. T. Willan to be Major.

Capt. A. C. MacDonald (late R.A.M.C., S.R.) to be Captain.

ROYAL AIR FORCE.

The undermentioned are granted short service commissions as Flight Lieutenants, retaining their present seniority: S. E. Duff and C. McC. Jones.

Flight Lieutenant R. Mugliston resigns his short service commission and is permitted to retain the rank of Captain.

INDIA AND THE INDIAN MEDICAL SERVICE.

Capt. J. Horn has been appointed Temporary Director of the Pasteur Institute. Lieut.-Col. T. Hunter has been appointed Civil Surgeon from Mussoorie to Bareilly. Lieut.-Col. W. Battye, on return from leave, has been posted as Residency Surgeon at Hyderabad. Major T. A. Hughes has been appointed Professor of Physiology, Medical College, Lahore. Major M. R. C. MacWalters, professor of surgery, Medical College, Lucknow, has been granted six months' leave. During his absence Lieut.-Col. Barnards will have entire charge of Simla. Lieut.-Col. Watson has been posted as Civil Surgeon at Ajmer. Lieut.-Col. McGaw has been declared a member of the United Provinces Medical Council. Major C. L. Dunn, on return from leave, resumes his duties as Sanitary Commissioner, United Provinces. Major A. E. J. Lister, professor, King George Medical College, has been granted leave on a medical certificate. Lieut. C. L. Amenrand to hold Civil Medical Charge of Raniket in addition to his duties, vice Capt. R. Hemphill, D.S.O., R.A.M.C. Lieut.-Col. T. Hunter has been appointed Civil Surgeon, Mussoorie, on completion of his special duty. Major A. S. Fry has relinquished charge of the duties of medical officer, Seistan. Major A. H. Napier, military medical officer, to have Charge of Roorkee, vice Capt. H. K. Diskshit. Major R. A. Chambers assumes charge [of office of Principal Medical School, Amritzar.

ST. MARK'S HOSPITAL.—**The annual meeting was** held at the Mansion House on Feb. 10th. In the unavoidable absence of the Lord Mayor, Colonel Sheriff Wishart took the chair on his behalf. The report showed that £1200 had been raised towards the much-needed improvement of the nurses' quarters, but that a balance of £800 was still required. During the past year 630 in-patients had been under treatment, and 1510 out-patients made 4876 attendances.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.
THURSDAY, Feb. 24th.—Papers:—Sir Ray Lankester: A Remarkable Flint Implement from Selsey Bill.—Dr. E. J. Allen: Regeneration and Reproduction of the Syllid Procerastea.—Mr. E. C. Grey and Mr. E. G. Young: The Enzymes of *B. Coli Communis*. Part. II., (*a*) Anaerobic Growth followed by Anaerobic and Aerobic Fermentation; (*b*) The Effects of Aeration during the Fermentation (communicated by Prof. F. G. Hopkins).—Dr. A. E. Everest and Mr. A. J. Hall: Anthocyanins and Anthocyanidins. Part IV. (communicated by Prof. F. Keeble).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Feb. 22nd.

SECTION OF MEDICINE: at Guy's Hospital, S.E.
Tea and Demonstrations (at 4–5.30 P.M.):
Dr. G. H. Hunt: An Experimental Oxygen Chamber.
Dr. G. K. Marshall: Apparatus for Induction of Artificial Pneumothorax.
Dr. G. H. Hunt and Dr. E. P. Poulton: Congenital Heart Disease with Analysis of Arterial Blood.
Dr. C. P. Symonds: A Case of Charcot-Marie-Tooth Muscular Dystrophy with Pseudo-hypertrophy.
And other Demonstrations by the Physicians and Assistant Physicians.
At 5.30 P.M.:
Dr. G. H. Hunt: Cardiac Efficiency in Normal and Pathological Conditions.
Mr. J. M. H. Campbell: Factors in the Causation of Dyspnœa.
Dr. J. A. Ryle: The Diagnostic Value and the Limitations of the Fractional Test-meal.
Will Members intending to come to tea kindly notify Dr. Poulton at Guy's Hospital not later than Feb. 20th.

Thursday, Feb. 24th.

SECTION OF TROPICAL MEDICINE: at 5 P.M.
Election of Officers and Council for the current Session.
Presidential Address by Sir Leonard Rogers, C.I.E.
Paper: Dr. J. Gordon Thomson and Dr. A. Robertson: The Value of Laboratory Reports in the Diagnosis of Suspected Dysentery, and their Interpretation by the Clinician.
Demonstrations by Professor Leiper and others.
SECTION OF UROLOGY: at 8.30 P.M.
CLINICAL and PATHOLOGICAL EVENING.
Specimens will be shown by—
Mr. Jocelyn Swan: Angeioma of Kidney.
Mr. Girling Ball: Hæmatoma of Kidney.
Will Members desiring to show specimens similar to the above please communicate with the Hon. Secretary, Mr. Cyril A. R. Nitch, 69, Harley-street, W. 1.

Friday, Feb 25th.

SECTION OF STUDY OF DISEASE IN CHILDREN: at 4.30 P.M. (instead of 5 P.M.).
Discussion: On "The Diagnosis and Treatment of Congenital Syphilis and its Effects."
To be opened by Sir Humphry Rolleston and Mr. O. L. Addison, followed by Dr. Findlay, Dr. Nabarro, and others.
CLINICAL SECTION / SECTION OF MEDICINE / SECTION OF SURGERY } ADJOURNED JOINT MEETING: at 8.30 P.M.
Discussion: On "The Medical and Surgical Treatment of Graves' Disease" (to be reopened by Mr. Donald Armour, Dr. J. M. H. Campbell, Mr. W. H. C. Romanis, Mr. A. J. Walton, Professor Earle, and others.
SECTION OF EPIDEMIOLOGY AND STATE MEDICINE: at 8.30 P.M.
Paper: Dr. R. M. F. Picken: The Epidemiology of Measles in a Rural and Residential Area.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Feb. 21st.—9 P.M., Lettsomian Lecture (II.):—Mr. G. E. Gask: Surgery of the Lung and Pleura.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.
MONDAY, Feb. 21st.—5 P.M., Arris and Gale Lecture:—Prof. J. Howell Evans: The Azygos System of Veins in their Association with Surgical Affections.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Feb. 21st.—2 P.M., Mr. B. Harman: Eye Department. Dr. Simson: Diseases of Women. 2.30 P.M., Mr. Baldwin: Visit to Surgical Wards. 5 P.M., Lecture:—Dr. G. Stewart: Locomotor Ataxia.
TUESDAY.—10 A.M., Mr. Steadman: Dental Department. Dr. McDougall: Electrical Department. 12 noon, Mr. T. Gray: Demonstration of Fractures. 5 P.M., Lecture:—Dr. Burnford: Investigation of the Functions of the Digestive Tract.
WEDNESDAY.—10 A.M., Mr. MacDonald: Genito-Urinary Department. 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. 2 P.M., Mr. Gibb: Eye Department. 5 P.M., Lecture:—Mr. D. Armour: Physical Signs and Diagnosis of Abdominal Tumours.
THURSDAY.—2 P.M., Dr. S. Pinchin: Medical Out-patients. Mr. Baldwin: Orthopædic Department. Mr. D. Armour: Operations. 5 P.M., Special Lecture:—Mr. S. Edwards: Points in Rectal Surgery (open to all medical practitioners).
FRIDAY.—10 A.M., Mr. D. Buxton: Dental Department. 2 P.M., Mr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Fernet: Skin Department. 5 P.M., Lecture:—Mr. Addison: Carcinoma of the Breast.
SATURDAY.—10 A.M., Dr. A. Saunders: Medical Diseases of Children. 2 P.M., Dr. Owen: Medical Out-patients.
Daily:—10 A.M. Ward Visits. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Feb. 21st.—10 A.M., Mr. W. E. Tanner: Surgical Out-patients. 2 P.M., Dr. A. J. Whiting: Medical In-patients. 2.30 P.M., Mr. E. Gillespie: Surgical Operations. Mr. J. B. Banister: Gynæcological Out-patients. Dr. J. B. Alexander: Medical Out-patients. 4.30 P.M., Clinical Demonstration:—Dr. J. B. Alexander: Cases of Medical Interest. 6 P.M., Dr. F. L. Provis and Mr. T. H. C. Benians: Venereal Department.
TUESDAY.—9.45 A.M., Lieut.-Col. R. H. Elliot and Mr. N. Fleming: Eye Operations. 2.30 P.M., Mr. H. W. Carson: Surgical Operations. Mr. C. H. Hayton: Diseases of the Throat, Nose, and Ear. Dr. Metcalfe: X Ray Department. 3 P.M., Clinical Demonstration:—Mr. C. H. Hayton: Lupus of Nose and Pharynx. 5.30 P.M., Dr. C. E. Sundell: Children In-patients.
WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations. 2.30 P.M., Dr. W. J. Oliver: Skin Department. Dr. J. B. Alexander: Medical Out-patients. 4.30 P.M., Clinical Demonstration:—Mr. N. Fleming: Cases of Eye Disease. 5 P.M., Dr. Provis and Mr. Benians: Venereal Department.
THURSDAY.—2 P.M., Mr. N. Fleming: Eye Out-patients. 2.30 P.M., Dr. A. J. Whiting: Medical Out-patients. Mr. H. W. Carson: Surgical Out-patients. Mr. J. B. Banister: Gynæcological Operations. Dr. J. Metcalfe: X Ray Department. 3 P.M., Clinical Demonstration:—Dr. J. Metcalfe: Treatment by Ionic Medication.
FRIDAY.—2 P.M., Mr. Howell Evans: Surgical Operations. 2.30 P.M., Dr. C. E. Sundell: Children Out-patients. Mr. E. Gillespie: Surgical Out-patients. 4.30 P.M., Clinical Demonstration:—Dr. R. M. Leslie: Selected Medical Cases. 5 P.M., Dr. Provis and Mr. Benians: Venereal Department.
SATURDAY.—3 P.M., Mr. H. W. Carson: Surgical In-patients.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C. 1.

MEDICAL SCHOOL.

MONDAY, Feb. 21st.—2 P.M., Out-patient Clinic: Dr. Collier. 3.30 P.M., Lecture:—Dr. Kinnier Wilson: Hysteria and its Treatment.
TUESDAY, Feb. 22nd.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Lecture:—Dr. Collier: Diseases of the Cranial Nerves.
THURSDAY, Feb. 24th.—2 P.M., Out-patient Clinic: Dr. Farquhar Buzzard. 3.30 P.M., Lecture:—Mr. Scott: Disturbances of the Vestibular System. (I.)
FRIDAY, Feb. 25th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Lecture:—Dr. Grainger Stewart: Affections of the Pituitary Gland.
Fee for Post-Graduate Course £7 7*s*. C. M. HINDS HOWELL, Dean.

MIDDLESEX HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).
TUESDAY, Feb. 22nd.—3 P.M., Emeritus Lecture:—Sir Alfred Pearce Gould: Surgery.

KING'S COLLEGE (DEPARTMENT OF SCIENCE), Strand.
Nine Lectures on Problems of Modern Science.
WEDNESDAY, Feb. 23rd.—5.15 P.M., Lecture (VI.):—Prof. A. Dendy: Biology.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Feb. 24th.—4 P.M., Lecture:—Dr. T. Thompson: Neuritis.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.
MONDAY, Feb. 21st.—5.30 P.M., Post-Graduate Lecture:—Dr. P. Hamill: Myocardial Disease.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.
Post-Graduate Course on Infant and Child Welfare.
TUESDAY, Feb. 22nd.—10.30 A.M., Dr. E. Pritchard: Practical Demonstrations on the Management and Feeding of Infants and Young Children—Demonstration XI., The Treatment of the Heat Regulating Functions.
THURSDAY.—3 P.M., Demonstration XII., The Feeding of Children between Nine Months and Two Years.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
THURSDAY, Feb. 24th.—6 P.M., Chesterfield Lecture:—Dr. W. Griffith: Diseases of the Skin Appendages.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.
TUESDAY, Feb. 22nd.—3 P.M., Lecture:—Prof. A. Keith: Darwin's Theory of Man's Origin.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Feb. 22nd.—4.30 P.M., Lecture:—Mr. P. R. Wrigley: Cholecystitis.

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.
THURSDAY, Feb. 24th.—4.30 P.M., Dr. Stirling: Common Eye Diseases and their Treatment. (At Ancoats Hospital.)

ST. MARY'S HOSPITALS, MANCHESTER, POST-GRADUATE LECTURE, at Whitworth-street West Branch.
FRIDAY, Feb. 25th.—4.30 P.M., Dr. Lacey: The Toxæmias of Pregnancy.

MANCHESTER BABIES' HOSPITAL.
Post-Graduate Lectures and Demonstrations in the Onward Buildings, Deansgate, or at the Hospital, Slade lane.
SATURDAY, Feb. 26th.—3.30 P.M., Dr. Chisholm: Demonstration of Differing Types of the Non-Thriving Infant. (At the Babies' Hospital.)

MANCHESTER FRENCH HOSPITAL POST-GRADUATE LECTURES, 24, Acomb-street, Whitworth Park.
THURSDAY, Feb. 24th.—4.30 P.M., Dr. A. C. Magian: Some Chronic Uterine Diseases and their Treatment.

Appointments.

BURGESS, A. H., F.R.C.S. Eng., M.B., M.Sc. Vict., has been appointed Professor of Clinical Surgery in the University of Manchester.

JACKSON, J., Certifying Surgeon under the Factory and Workshops Acts for the Marple district.

MCDONALD, N., M.B., Ch.B. Vict., Anæsthetist to the Great Northern Central Hospital, London, N.

TODD, A. H., M.S., B.Sc. Lond., F.R.C.S. Eng., Assistant Surgeon to the Queen's Hospital for Children, Hackney.

Vacancies.

For further information refer to the advertisement columns.

Beckett Hospital, Barnsley.—Jun. H.S. £200.

Belgrave Hospital for Children, Clapham-road, S.W.—Asst. P. 50 gs.

Birmingham General Hospital.—Res. Anæsth., H.S., Obstet. H.S. £100. Also H.S. to Skin and Venereal Depts. £125.

Bolingbroke Hospital, Wandsworth Common, S.W.—Res. M.O. £200 Also H.S. £150.

Bradford Royal Infirmary.—Two H.S.'s. £200. Also H.P. £200.

Bristol Royal Hospital for Sick Children and Women.—H.S. and H.P. £150 each.

Bristol Royal Infirmary.—Two H.S.'s for General Dept. £120. H.S. for Ear, Nose, and Throat Dept. £120.

Cairo, Egyptian Government School of Medicine.—Two Professorships of Ophthalmology. British, L.E.600. Egyptian, L.E.500.

Central London Ophthalmic Hospital, Judd-street, W.C.—Jun. H.S. £50.

Cheshire County Council, Wrenbury Hall Colony.—Res. Med. Supt. £600.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—M.O. £200.

City of London Maternity Hospital, City-road, E.C.—Res. M.O. £100.

City of London Union, 2a, Bow-road, E.—M.O. £900.

Dewsbury and District General Infirmary.—H.S. £250.

Dorchester, Dorset Mental Hospital, Herrison.—Sec. Asst. M.O. £400.

Dundee Royal Infirmary.—Hon. Visiting S.

Eastern Dispensary, Leman-street, E.—P. and Ophthal. S.

East Sussex County Council, Darvell Bank Sanatorium.—Med. Supt. £750.

Enham Village Centre for the Treatment and Training of Disabled Ex-Service Men, near Andover, Hants.—Medical Director. £700.

Evelina Hospital, Southwark, S.E.—H.P. £160. Also Hon. S. to Out patients.

Exeter, Royal Devon and Exeter Hospital.—H.P. £150.

Great Northern Central Hospital, Holloway, N.—P. to out-patients.

Herefordshire General Hospital.—H.S. £200.

Hospital for Women, Soho-square, W.—Clin. Assts.

Hull Royal Infirmary.—Asst. H.S. £150.

Ipswich, East Suffolk and Ipswich Hospital.—Female H.S.

Kent County Mental Hospital, Chartham, near Canterbury.—Jun. Asst. (Third) M.O. £350.

Kingswood, Bristol, Cossham Memorial Hospital.—Visiting S.

Lincoln County Hospital.—Jun. H.S. £150.

Liverpool Maternity Hospital and Ladies' Charity.—Hon. S.

London County Council, Hackney Institute, Dalston-lane, E.—Lect. in Sanitary Science. 30s. each attendance.

London County Council, Public Health Department.—Asst. M.O.'s. £400.

London County Mental Hospitals.—Clin. Assts. £200.

London Lock Hospital, Dean-street, Soho, W.—H.S. £200. Also Registrar.

Maidstone, Kent County Mental Hospital.—Asst. M.O. £350.

Manchester, Ancoats Hospital.—Hon. S.

Ministry of Pensions, Grangethorpe (Orthopædic) Hospital, Manchester.—Jun. M.O. £350.

National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, W.C.—Res. M.O. £200.

Newark Hospital and Dispensary.—Res. H.S. £200.

Newport, Mon., Royal Gwent Hospital.—H.S. £200.

Northampton, County Mental Hospital, Berry Wood.—Sen. Asst. M.O. £300. Also Jun. Asst. M.O. £210.

North Middlesex Hospital, Silver-street, Edmonton.—Asst. S. 28s. daily.

North Riding of Yorkshire County Council Education Committee.—Two Asst. Sch. M.O.'s. £500 each.

Nottingham City.—Asst. Res. M.O. £300.

Nottingham General Hospital.—H.S. £200.

Oldham Royal Infirmary.—Third H.S. £200.

Queen Mary's Hospital for the East End, Stratford, E.—H.S. and H.P. £150 each.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Asst. P.'s.

Rochester, Kent, St. Bartholomew's Hospital.—Res. H. S. £250.

Royal Waterloo Hospital for Children & Women, S.E.—Cas. O. £150

St. Bartholomew's Hospital Medical School.—Chair of Anatomy. £900.

St. Pancras Dispensary, 39, Oakley-square, N.W.—Hon. P.

St Peter's Hospital, Henrietta-street, Covent Garden, W.C.—Hon. M.O.

Sheffield City.—Asst. Tuberc. O. £500.

Sheffield Royal Hospital.—Res. Surg. O. £250.

Sheffield Royal Infirmary.—Asst. Cas. O. £150

Stroud General Hospital.—H.S. £200.

Sunderland Children's Hospital.—Female Jun. Res. M.O. £150.

Western General Dispensary, Marylebone-road, N.W.—Hon. P. and Asst. Hon. Aural S.

Wigan County Borough.—M.O.H. £850.

Wilts County Council.—Female Asst. County M.O.H. and Asst. Sch. Med. Inspec. £500.

Wolverhampton and Staffordshire General Hospital.—Hon. Specialist Ear, Nose, and Throat Dept.

York Dispensary.—Res. M.O. £250.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshops Acts at Westbury (Salop).

Births, Marriages, and Deaths.

BIRTHS.

DEWAR.—On Feb. 11th, at The Nook, Tuxford, Notts, the wife of Allan Dewar, M.R.C.S., L.R.C.P., Captain (late R.A.M.C.), of a daughter.

DICK.—On Feb. 6th, at Beaufort House, Grange Park, Ealing, the wife of Major A. M. Dick, F.R.C.S., I.M.S., of a daughter.

TAYLOR.—On Feb. 7th, at Wayland House, Bridlington, the wife of C. R. Taylor, O.B.E., M.B., B.Ch. Cantab., of a daughter.

WILLCOCKS.—On Feb. 13th, in Sydney, to George C. Willcocks, M.R.C.P., F.R.C.S., and Hilda (née Richards) Willcocks, L.R.C.P., M.R.C.S.—a son.

MARRIAGES.

COVENTON—OSTLE.—On Jan. 29th, at St. Bartholomew's-the-Less, E.C., Albert William Duncan Coventon, M.B., to Helen Muriel, youngest daughter of the late Rev. W. and Mrs. Ostle.

POOLE—BUCHANAN.—On Feb. 5th, at St. Martin's-in-the-Fields, Frank Stedman Poole, M.R.C.S., L.R.C.P., to Marjorie, younger daughter of Mr. and Mrs. James Buchanan, of Draytongardens, S.W.

DEATHS.

TOMLINSON.—On Feb. 8th, at Sparth Hall, Stockport, John Tomlinson, M.R.C.S., in his 90th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Communications, Letters, &c., to the Editor have been received from—

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Notes, Short Comments, and Answers to Correspondents.

KINEMATOGRAPH ILLUMINATION:

THE USE AND ABUSE OF LIGHT IN STUDIOS FOR KINEMA FILM PRODUCTION.[1]

BY J. C. ELVY, A.M.I.E.E.,
CONSULTING ENGINEER.

The Lighting Equipment of Kinema Studios.

THERE are a number of points to be considered in the lighting equipment of a kinema studio. The essential factors are the actinic values of the various lighting units available, the amount of electrical energy required to operate them, the initial cost of the equipment, and the cost of maintenance. The question of illumination and its relationship to the sensitiveness of both the photographic film and the physiological system is now gaining the prominence it deserves.

Eyesight Troubles in Kinema Studios.

It is now more than a year ago since I referred to the possibility of eyesight trouble in kinema studios, arising from the special lighting conditions employed. The eye has been developed under conditions of natural lighting which involve only moderate intrinsic brilliances. The accompanying table shows the intrinsic brilliances of various illuminants:—

Source of light.	Candle-power per sq. in.	Source of light.	Candle-power per sq. in.
Uniform white sky	2·5	Flame arc	5,000
Oil lamp	3—5	Open arc	10,000—50,000
Mercury vapour lamp	15—20	Open arc (crater)	200,000
Enclosed arc	100—500	Sun	500,000—600,000
Gas-filled tungsten filament lamp ...	2200		

This table alone suffices to show the great differences between the conditions when a film is taken in the open air by the natural light of the white sky, and by powerful arc lamps at close quarters.

There seems to be a general impression that the main source of eyesight trouble in studios, when it occurs, is the exposure to sources of very great intrinsic brilliancy. It is possible that the strong ultra-violet component in some lights, may accentuate a tendency to inflammation of the eyes, as it has been remarked in other processes—e.g., in arc-welding, &c. Inflammation or scorching of the skin which accompanies eye irritation in some cases is also a well-known result of excessive exposure to ultra-violet light. Again, prolonged exposure to light of a peculiar colour may lead to subsequent derangement of colour vision. Professor Burch, by exposure of his own eye to intense monochromatic light, produced disturbances which persisted for more than a year. These are questions on which the coöperation of ophthalmologists is necessary. It seems clear, however, that whichever of the above effects is concerned, the danger of injury occurs mainly when images of great concentrated brightness are formed on the retina of the eye.

There have been reports in newspapers of artistes suffering from eyesight troubles, which have been ascribed to the effect of exposure to very powerful illuminants. I have an extract from the *Picture Playgoers* (Nov. 22nd, 1919, p. 614) showing where several artistes of a film company are affected by semi-blindness, due, it is stated, to the powerful studio lights. The manifestation of this trouble in a severe form in this country seems to have coincided with the importation of certain types of lamps, though it may have existed in a minor form before then, due perhaps to carelessness in manipulation of arc lamps without suitable diffusers.

Dr. Chappe, in a paper read before the Société Française d'Ophtalmologie, said that "the painful results of the arc lamps' glare become most acute two or three hours after the artistes leave the studio." On his advice one studio has inaugurated a regular system of eye baths for artistes on the conclusion of the day's work. From an artistic and human point of view it is impossible for artistes to act naturally under the blinding glare of points of high intrinsic brilliancy. Producers are endeavouring to overcome the difficulty by providing coloured spectacles for artistes' use during rehearsals, and removing them before the actual "take." But how can one in these circumstances get the correct expressions? The human eye cannot instantly adapt itself to these great contrasts. One trade journal, *The Bioscope*, compares artistes with miners, as taking up a career of their own free will and fully cognisant of the risks they run. But, I may remark, up to a certain time the artistes were not aware of running any risks; also, that the miners are protected by Government regulations, and industrial factory operatives are similarly safeguarded.

Visual and Photographic Effect.

A point of very great importance in the lighting of kinema studios is the distinction between visible light and light of photographic value. The human eye is generally regarded as being sensitive to light within the wave-lengths of about 0·39μ (violet) to 0·75μ (deep red). The maximum luminosity occurs near 0·55μ, corresponding to yellow-green coloured light, but the maximum chemical or photographic effect occurs near 0·39μ, corresponding to the region just outside the visible rays. Thus for photographic purposes—that is, for actinic rays—the visual light is practically of no value as a guide. From the photographic standpoint, it is desirable, according to Dr. Mees of the Kodak Co., to select an illuminant with an abundance of rays of approximately 0·40μ wave-length, and a certain amount of ultra-violet rays. To attain this result efficiently one should dismiss the aim of producing an extravagant visual candle-power. Excess of ultra-violet rays has a prejudicial effect on the eyes, but it is known that all varieties of ultra-violet light are not equally injurious, and it would therefore be a useful inquiry to ascertain whether the rays which are chiefly needed from a photographic standpoint fall within the range of wave-length that is liable to cause eye trouble.

It is clearly of great importance to have available data comparing, not merely the efficiency of illuminants in a visual sense (i.e., for the purpose of creating *brightness*), but their relative value in terms of chemical or photographic effect. Dr. Mees remarks:—

"For cinematograph work where halation is a difficulty it is an advantage therefore, both for the attaining of the best gradation and for the reduction of halation to a minimum, to use for these ordinary (photographic) materials, light of an average wave-length as near as possible λ 400$\mu\mu$ rather than light having its maximum near λ 470$\mu\mu$."

He gives the following data, applying to ordinary photographic work:—

*Photographic efficiency.**		*Constancy and steadiness of light.*	
Enclosed arc as	62	Arcs	Fair.
Flame ,, ...	52	Mercury vapour	Good.
Mercury vapour (not quartz type; quartz is transparent to ultra-violet rays)	47		

* Due regard must be paid to electrical current values when reading these figures.

Recently an impartial judge selected the best of a series of photographs taken by artificial light; this was produced by an illuminant using only ¾ of a unit of electricity per hour, as compared with others requiring respectively 3½ and 6 units.

The Lighting of Scenes in Studios.

The qualities desirable in illuminants for use in kinema studies may be roughly summarised as follows: (*a*) high actinic value with relatively low consumption of energy and small losses in diffusion, reflection, and resistances; (*b*) low intrinsic brilliancy; (*c*) absence of heat or fumes or other harmful conditions; (*d*) long useful life; (*e*) constancy and steadiness of light. Some producers emphasise "snappiness," "needle-point sharpness," "crispness" as desirable qualities. Picture-goers, however, do not always comment favourably on these extreme black and white contrasts, which are fatiguing to the eyes.

At the present time one experiences the need of suitable instruments for testing photographic value—similar to those already available for the rapid determination of visible illumination. Present forms of actinometers which involve waiting for the coloration of a strip of sensitised paper are inconvenient and liable to present difficulties to an operator whose eye has already been fatigued by or dazzled by looking at the lights. I suggest the use of some convenient unit, such as photmen or phot, similar to the term "lumen," which is used for visual illumination and which is readily ascertained by simple devices.

In the studio methods of directing and occasionally shading the light deserve study. The suggestion that illuminants using white light should be covered with blue glass cannot be approved. In this way the actinic value for a given visible illumination would doubtless be increased, and possibly the device might tend towards the comfort of actors. But such screening involves a loss in efficiency. One merely absorbs a considerable amount of visible light and some ultra-violet. What is desirable is to produce a source which itself emits radiation of the requisite quality, bearing in mind that, at the present time, certain difficulties are experienced with a film base of a panchromatic nature.

[1] Part of an introduction to a discussion at a meeting of the Illuminating Engineering Society held on Jan. 18th.

REPORT ON THE GLOVER SERUM.

AN interim report has been presented by the special committee appointed by the council of the Academy of Medicine, Toronto, to examine all the available data, experimental and clinical, upon which Dr. Glover had based his claims to advance our knowledge of the causation and treatment of cancer. The data which the committee was able to obtain did not convince it that the results of treatment by the use of Dr. Glover's serum were better than those obtained by similar methods introduced by others, which had ultimately disappointed the hopes entertained of them. The report is signed by W. H. Harris (chairman), H. B. Anderson, Herbert A. Bruce, John J. MacKenzie, Jabez H. Elliott (ex-officio), Harris McPhedran (secretary), and received the concurrence of Geoffrey Boyd, W. P. Caven, and A. Primrose, who were added to the committee. It was adopted by the council of the Academy on Jan. 13th.

A CHILD PILGRIMAGE LASTING TWO YEARS.

WE have received from *La Nouvelle Revue* (Paris) a brochure entitled "800 Enfants Russes autour du Monde," in which Mons. P.-L. Hervier sets out attractively the adventures of the 800 Russian children, the residue of a much larger number of children of well-to-do Petrograd parents, who sent them to the Ural in the spring of 1918 on the assurance of safety and plenty there. Cut off in the summer by the varying fortune in the encounter between Czecho-Slovak troops and the Red army, and deserted by many of their supervisors, these children began to run wild in the woods, seeking their own food. In January, 1919, the American Red Cross took them in charge and conducted them by easy stages round the world—Vladivostok, San Francisco, Panama Canal, New York, Finland—back again to Petrograd at the end of 1920, where a committee of parents was prepared to receive them. At New York the children showed their initiative by refusing to go to a camp being prepared for them near Bordeaux, electing to go straight home whatever might be the privations in store for them.

"IRIDIAGNOSIS."

ANY claim to a startling discovery by a layman in the domain of medicine is certain of a wide advertisement irrespective of its inherent credibility. A few weeks ago we commented on the claim of a Paris professor to have discovered hitherto unknown organs of vision, enabling the blind to see. Now we are told that a graduate of Edinburgh University has been lecturing in London on a new method of diagnosing all sorts of diseases merely by gazing into the eyes of the sufferer. It seems that the condition of every organ and part of the body is reflected in the iris. By this means, an interviewer for the *Star* was told, it is possible to diagnose not only the ailments from which anyone may be suffering, but also the remedies which have been adopted to treat them. Nothing, apparently, eludes the "peering, incisive look" of the "iridiagnostician," whether it is a cured cold, the quinine that has been taken to cure the cold, a cut finger which has healed, or even incipient cancer.

It is, we think, an unfortunate fact that to the majority of people the human body is as mysterious a subject as is the human mind to nearly all of us. Perhaps to include a little elementary physiology in ordinary school teaching would be the best antidote to the rubbish on the subject which finds its way to popular notice. Meantime, we are not surprised that the possibilities of the iris in this connexion have been exploited. The iris is one of the most variable, as it is one of the most beautiful structures in the human body. The distribution of pigment in it is not, any more than the conformation of the cutaneous ridges on the fingers, identical in any two individuals. Unfortunately for the theory put forward, the pigmentation of the iris is laid down once for all in early life, and, save as the result of diseases directly affecting the eye itself, does not change in later years. With this exception, therefore, the only problems on which the pigmentation of the iris can throw any light are those connected with heredity.

COLONIAL HEALTH REPORTS.

Nyasaland.—In the report for 1918–19 the following reference to the public health occurs: "Owing to the presence during 1918 of the German enemy forces along the eastern borders of Nyasaland and on Lake Nyasa there was a widespread and continuous movement of our troops, followers, and carriers within the Protectorate throughout the year, movements which afforded every facility for the spread of infectious and contagious diseases. Small-pox was confined to the districts in which it was prevalent in the previous year, though sporadic outbreaks occurred in other areas, but with the assistance of the military medical officers these outbreaks were promptly dealt with and did not assume an epidemic intensity. There were only five cases of bubonic plague reported from the North Nyasa district in the neighbourhood of Karonga, as against 28 in the previous year and 13 in the year before that. No recurrence of cerebro-spinal fever occurred during the year, and this disease may now be regarded as non-existent in Nyasaland. From the epidemiological point of view one of the most notable events of the year, and a factor affecting the public health of the Protectorate more prejudicially than any other, was the appearance of influenza in the month of November. This epidemic rapidly spread throughout the Protectorate, reached its maximum intensity in December, and declined steadily during the month of January. The number of Europeans resident in the Protectorate on March 31st, 1919, including officials, was 492 males and 232 females, as compared with 463 males and 252 females in the previous year. The Asiatic population numbered 407. The native population is estimated at 1,216,100—approximately 551,600 males and 664,000 females.

Turks and Caiços Islands.—Mr. G. Whitfield Smith, the commissioner and acting judge for these West India Islands (geographically forming a sort of annexe of the Bahama group), writes in his report for 1919: "No serious epidemic or outbreak of sickness was reported during the year. The number of births was 173 and of deaths 169, representing 30·8 and 30 per 1000 of the population respectively. On Jan. 9th 64 natives of the Dependency perished at the stranding of the s.s. *Yuna* on Mouchoir Bank, which accounts for the abnormally high death-rate. The Manning Hospital continues to minister to the needs of suffering humanity in a most satisfactory manner; 55 cases are stated by Dr. H. H. Purinton to have received treatment at this hospital during the quarter ending Sept. 30th, 1919, and the acting Government Medical Officer concludes his report by saying there are few, if any, public expenditures in the Island of Grand Turk, and, in fact, in the whole Colony, which have been a greater benefit to the population than the money spent for the support of the Manning Hospital."

"SQUINT, MANCINISM, AND TUBERCLE."

To the Editor of THE LANCET.

SIR,—"Squint" being a vernacular word, and lay journalists being in the habit of looking at THE LANCET, it results that the article in your last week's issue got into a daily paper, unfortunately with mention of my name, after which an interviewer called and was refused what he asked. Publication of this disclaimer would oblige.

I am, Sir, yours faithfully,

Feb. 13th, 1921. THE AUTHOR.

To the Editor of THE LANCET.

SIR,—Dr. Rivers in his interesting article upon squint in this week's LANCET uses the term "mancinism" as indicating left-handedness. I cannot find this word in any dictionary, lay or medical. For the benefit of those who may be as ignorant as myself, will Dr. Rivers kindly give its etymology?

I am, Sir, yours faithfully,

Feb. 13th, 1921. IGNORAMUS.

*** If "Ignoramus" consults the "Dictionary of Medicine" (Gould) he will see that it simply gives the following entry: "Mancinism (*mancus*, imperfect, maimed), left-handedness." This probably is based on the statement of Ulpian, the Roman jurist, who refers to two kinds of left-handed persons, he that is naturally left-handed being called "scæva" and he that uses the left hand through a weakness of the right being called "mancus." This word seems to have been borrowed by the French in the word "manchot," and to have meant that through a weakness in either hand the other was used only, as displayed in the couplet by Delille (1738–1813), a French classical poet, who occupied the chair of Latin poetry at the Collège de France:—

"Le bras manchot qui, resté sans office,
Laisse au survivancier tout le poids du service,"

the word "survivancier" being "reversioner" in English. Now the word "manchot" seems to be more applied to a one-handed or one-armed person (à qui il manque un bras ou une main).—ED. L.

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